



Software Technical Bulletin
May 1987

Software Information Services





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NOTES & COMMENTS

Editor's Notes

Editor's Notes

Springtime is here once again and the new growing season is upon us. Not only is the grass green and growing down by San Francisco Bay, but Sun is also growing this spring by leaps and bounds.

At the forefront of Sun's growth, Software Information Services (SIS) has added a new member to the team. Janice Holt joins SIS as part of the larger Customer Software Services (CSS) team. Janice will be working on future issues of the Software Technical Bulletin (STB), plus the bugs list published quarterly in the STB. She brings experience and enthusiasm to our group, and you will be seeing her articles in upcoming issues.

SIS and CSS are gearing up to provide even more services to Sun users. We have expanded to the second floor of our building and are glad to be moving up in the world. The view is great! You'll be seeing more articles than ever before.

This is our quarterly 'big issue' containing the Customer Distributed Bugs List (CDB). If you have any questions, comments, or articles regarding the STB or CDB, please send your ideas and questions to *sun!stb-editor*.

If you are receiving your STB at an incorrect address or if you have a change of address, please contact your sales office directly. Your sales representative can then make the necessary contacts at Sun to ensure that your STB is addressed correctly and that your contract needs get the proper attention.

Finally, note that the May STB issue begins with page 39. This is future-compatibility. We are gearing up to add a yearly cumulative index, printed each month, that will reflect the year's STB index entries to date. Look for this year's cumulative index to include the April STB issue which began with page 1 of the 1987 cumulative pagination. This index will first appear in the upcoming June STB issue.

Thanks in advance for your readership and comments.

The Editor

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ARTICLES

Keeping Your lpr Flow Control



lpr Flow Control

Technical Support in Santa Clara, California has found a problem and defined a workaround for problems with line printer flow control. It is possible to lose flow control as described below.

When `lpr` starts a print operation, it opens `/dev/<printer>`, sets baud rates and other parameters, and then sends the job. If there are more jobs, it sends them as well, and then closes `/dev/<printer>`. Flow control is in effect as long as `/dev/<printer>` is open.

However, you can lose flow control if the printer sends `xoff` while the port is closed since `xoff` is ignored in this case.

The lpr Fix

You can work around this problem by placing one of the three following commands in `/etc/re.local` or in `/etc/rc`. These commands will keep `/dev/<printer>` open all of the time. Note that the commands will stay in effect from one session up to 115 days.

<code>cat </dev/<printer></code>	or better
<code>sleep 999999 > /dev/<printer></code>	works for 11 days or
<code>sleep 9999999 > /dev/<printer></code>	works for 115 days.

Please take care to run either of the `sleep` commands in the background. You will otherwise wonder why your system takes over three months to reboot!

The Changing telnet Specification



The Problem Defined

Problems arise when you try to run `uucp` through a Bridge terminal server and `telnetd`. `uucp` gets through login, sends a couple of packets or so, and then freezes. Attempts to transfer binary data via this same connection freeze after 253 characters.

The `telnet` situation is complex and depends on subtle interpretations of the `telnet` protocol specification.

The specification says that the CR LF sequence is to be used to mean 'end-of-line.' The client `telnet` should convert end-of-lines to the CR LF sequence. The server should convert this sequence into end-of-lines on the server operating system.

Release 4.2BSD `telnet` sent the CR LF sequence when the user pressed RETRN (CR) since this is the way users indicate end-of-line. However, release 4.3BSD uses LF as the result of the CR LF sequence since Unix uses LINE FEED (LF) for end-of-line. A further complication may result from future plans at Bridge where they plan to change Bridge's default to be release 4.3BSD compatible.

`uucp`, `telnetd`, and a Changing telnet Specification

The technical support group at Bridge and a review of the `in.telnetd` code lead to the explanation shown below.

ORIGINATING	ANSWERING	SUN
<code>uucp</code>	TERM	SERV
calls terminal server	answers	
gives connect commands to server	telnets to Sun	runs <code>in.telnetd</code> to manage connection, establishes pty, runs login
sends login to Sun		validates login, invokes <code>uucico</code> , sets RAW (binary) mode
begins <code>uucp</code> operation		

The problem is that `in.telnetd` on the Sun workstation should be switching the Sun-Bridge connection to binary mode when `uucico` puts its controlling

Futures and Options

terminal in RAW mode.

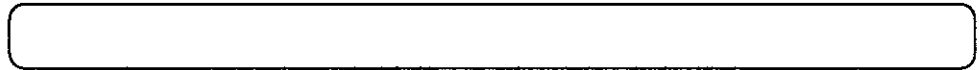
The past and present are known as shown below for Sun releases through release 3.3. Note that going from a new client to a new server should continue to operate properly. The only problem is between an old client and a new server. A client operating under release 3.2 and beyond should have no problem talking to either old or new servers.

All Sun releases 3.1 and earlier:
CR LF -> CR

Sun releases 3.2 and 3.3 (considered a bug):
CR LF -> LF

Please call your support center for more information on which method is used as future SunOS releases become available.

Scratch or Keep Register D2



Compilers and Bugs

A bug has been found in three Sun compilers, Sun C, Fortran 77, and Pascal. It appears to be present in both releases 3.1 and 3.2, and exists whether or not the optimizer is used.

Recall the Sun convention that registers D0 and D1 are scratch registers. Registers D2 through D7 are 'permanent' registers, where any routine using them has to save and restore them appropriately. The bug is that remainder calculations, MOD in Fortran and % in C, modulo an explicit power of two and can generate code which uses D2. However, D2 is neither saved nor restored. The workaround is to use a variable as a second argument.

Look for this bug to be fixed in release 3.4. In the meantime, you can bypass the bug by using the `-mc68010` flag on the compilers. This will not generate the best code and, in particular, the Floating Point Accelerator (FPA) is not available.

Bug-Generating Programs

A couple of short programs appear below that generate the bug. First, the Fortran version:

```

INTEGER FUNCTION PLTPEN(PEN)
INTEGER PEN
PLTPEN = (MOD(PEN,5)) + 8 * MOD((PEN / 5), 4)
RETURN
END

```

Second, the C version, doing much the same and generating the same bug.

```

pltpen_(pen)
int *pen;
{
    int sty = ((*pen) % 5) + 8 * (((*pen) / 5) % 4);
    return sty;
}

```

The following main() program demonstrates the nature of the C bug quite clearly.

```

main()
{ register int a,b,c,d,e,f; /* This should mean that f is D2 */
  int z;
  a=b=c=d=e=f=0;
  z=6;
  pltpen_(&z);
  printf("%d\n",f); /* prints 3, which is somewhat odd */
}

```


The assembler produced from the Fortran follows. Editorial comments from the contributing programmer start with '***.'

```

.data
.data1
.bss
.data
.align 4
.text
##PROC# 07
.text
.globl _pltpen_

_pltpen_:
##PROLOGUE# 0
link      a6,#0
addl     #-LF1,sp
moveml   #LS1,sp@ *** An attempt to save registers
                    *** but LS1 is in fact 0, so no
                    *** registers are saved

##PROLOGUE# 1
L15:
jra      L12      *** eccentric
L12:
movl     a6@(0x8),a0
movl     a0@,d0
divsll  #0x5,d1:d0 *** the MOD(PEN,5) calculation
movl     a6@(0x8),a0
movl     a0@,d0
divsl   #5,d0      *** PEN/5
                    *** Now we are going to do the MOD(...,4)
                    *** which we will do by ANDing with 3
                    *** except that this will not work for
                    *** negative numbers
                    *** Load 3 into D2, which we have not saved
moveq   #3,d2
tstl    d0
jge     L2000000
negl    d0          *** the negative case
andl    d2,d0
negl    d0
jra     L2000001
L2000000: andl  d2,d0 *** the positive case
L2000001: asll #0x3,d0
addl    d0,d1
movl    d1,a6@(-0x8)
jra     L11
L11:
movl    a6@(-0x8),d0
jra    LE1

```

```
LE1: unk      a6
      rts
      LF1 = 32
      LS1 = 0x0
      LFF1 = 32
      LSS1 = 0x0
      LP1 = 0x8
      .data1
```

Printing a Pounds Sterling L

Troff: The Pounds Sterling Symbol

You may have found that printing the 'L' symbol for pounds sterling would be convenient in many instances. This article contains steps to print the correct symbol using `ptroff` and your LaserWriter.

The problem that you need to solve is to cause the 'upper case 3,' the number symbol, to print on the LaserWriter as a pounds sterling symbol.

The number symbol (#) is represented by 43 (octal), and the sterling symbol by 243 (octal). The PostScript Symbol font contains no sterling sign and `troff` knows the number symbol to be in the symbol font, `.ft S`.

You will need to change the map file to allow the number symbol to be mapped to a sterling symbol. You cannot simply change the `Times.map` file since the mapping file generation supplied on the tape is a two-stage process, in which `troff` learns there is no number symbol in the symbol font. (Recall you just mapped it out of the symbol font.) `troff` therefore prints a space instead of the number symbol character. You cannot therefore use the standard Adobe software to set this up.

Use the steps below to change the number symbol to the sterling symbol.

1. Copy the `Times.map` file to `TimesUK.map`.
2. Edit the `TimesUK.map` file to change `@FAMILYNAME Times` to `@FAMILYNAME TimesUK`. Edit the line containing 0043 'number' to change `SYMBOL` to `EXTRAS`, 0043 to 0243, and 'number' to 'sterling.'
3. Run `../pscatmap TimesUK.map`.
4. Delete the `c` files generated by `pscatmap` by using `rm ft?.c`.
5. Ensure that the `ct` file is readable by using `chmod a+r TimesUK.ct`.
6. You now need to get `troff` to generate its text as if it were using the Times font, and then `pscat` it with the `TimesUK` character mapping tables. Edit the `ptroff` shell script by adding `catfamily=TimesUK` as a new line after the line `family=Times`.
7. In the case of the `-F` option, add `catfamily=$2` after `family=$2;`. Note this assumes something which is not necessarily valid. The assumption is that the user specifies `-F`. The `cat` mapping will then be identical to the `troff` mapping. Thus you cannot do a `ptroff -F TimesUK`. `ptroff -F Times` allows the number symbol to print as a

number symbol instead of as a sterling symbol.

8. Change the line `pscat= . . .{family}.ct` to `pscat= . . .{catfamily}.ct`.
9. Test the new script by sending it some text.

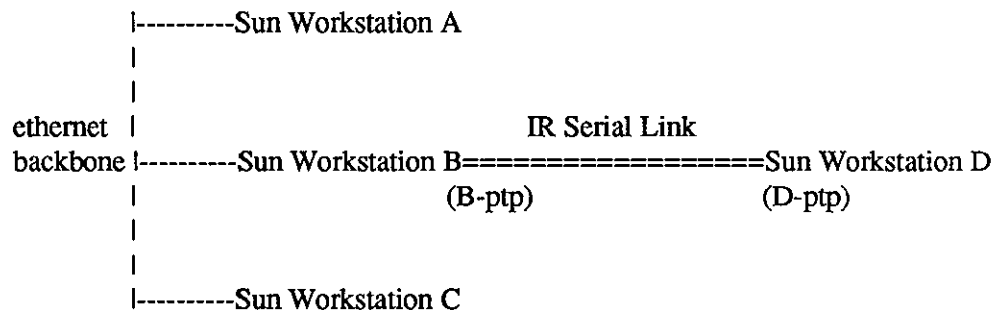
Note that if you want to mix helvetica, times, and courier, this is the way to go. However, if you use explicit `.fp` commands in your source code, this will not work correctly. The `pscat(1)` manual page warns of this in the BUGS section.

Routing to Standalone Machines

Routing: Networks and Standalone Machines

You may need to run the SunLink Internetwork Router (INR) between a network and standalone machine. The configuration shown below has been made to work in some sites. The INR is designed to connect two *networks*, and one standalone machine is not a network. You may find the information below helpful in getting the connections set up correctly.

Consider a net configuration shown below where A, B, C, and D are Sun workstations. The connections among A, B, and C is straight ethernet. Workstations B and D are connected via the INR and synchronous modems. Workstation D is a standalone and is not directly connected to the ethernet. The INR software is installed on workstations B and D. B-ptp and D-ptp are the INR connections.



The `/etc/hosts` file or yellow pages (YP) host database needs to be set up as shown below. This allows the four workstations to share routing entries and work together. Notice that workstations A, B, and C are on the same net (192.9.200) and B-ptp, D-ptp, and D are on a second net (192.9.250).

```

192.9.200.1  A
192.9.200.2  B
192.9.200.3  C
192.9.250.4  B-ptp
192.9.250.5  D-ptp D
  
```

You would also observe the following in the `/etc/networks` or Yellow Pages (YP) networks database.

```

mainnet      192.9.200
ptpnet       192.9.250
  
```

Since workstation D is a standalone, no ethernet interface configuration (i.e. `ie` or `ec`) has been done involving an `/etc/ifconfig ... UP` or `and /etc/ifconfig ... DOWN`.

If you tried a configuration with workstation D on a third net, instead of the ptp-net you would use the following in the hosts file.

```
192.9.350.6  D
```

You would also use

```
thirdnet 192.9.350
```

in the networks file.

However, you could not `rlogin` to workstation D from workstations A, B, or C. You would get a *network unreachable* response. You could, however, `rlogin` to workstations A, B, or C from workstation D.

In other words, the A-B-C network is in the routing tables on workstation D. This can be seen using `netstat -r`. However, the routing tables for workstation D are not seen at workstation B with all machines running `/etc/in.routed`.

The configuration with workstation D on a third net would work only by doing an `/etc/ifconfig ie0 ... UP` on workstation D. However, this produces a steady stream of 'ie0: no carrier' messages. This configuration would not work by simply doing an `/etc/ifconfig ie0 ... DOWN` because `/etc/in.routed` only processes interfaces that are configured UP.

One more correction is needed for proper network operation at workstation D. The `-s` option should be used when starting `/etc/in.routed -s`. The routing information for the line will otherwise be lost after a few minutes. This loss results from workstation B not hearing routing information from workstation D. Such routing information is normally only sent by gateways, which does not include workstation D. The `-s` flag forces workstation D to send the information anyway.

It is important that the machine hostname refers to an IP interface which is configured UP to avoid failure of other software parts of the system. This is why D and D-ptp have the same host number. This also applies to Sun workstations having no network interfaces. The hostname should refer to the same IP address as `localhost`, 127.0.0.1, in these cases.

Standalone machines at the end of an INR link can be viewed as a remote workstation, like D in this example. The link provides the same network functions as a workstation attached to an ethernet with no user interface changes. The user can use `rlogin`, `rcp`, NFS, YP lookups, and all other network features from any location with a phone. The only difference visible to the user is the difference between a 9.6 kbps and 10 Mbps network connection.

Serial line data traffic is automatically multiplexed or shared for any number of network applications at one time. For example, you can be doing an `rlogin` at the same time as an NFS access. The remote workstation can be located anywhere there is a serial line since it is the only connection needed between the

remote workstation and the main network.

Configuring the remote workstation is all that is required. No changes to `uucp` files or `tip` file transfers are needed. You may want to adjust NFS timeouts to be longer, however.

Hardware and software requirements for the INR link described in this example are shown below.

1. Modems. You will need synchronous modems with at least 4.8 kbps. However, modems slower than 9.6 kbps are not recommended and should be discouraged.
2. SunLink IR product. You will need two copies, one for each end of the INR link.
3. Sun workstations. The workstations at both ends of the INR link must be Suns.
4. Local and SCP ports. Ports at the network end need to be synchronous. ALM ports cannot be used since they are asynchronous only.
5. Each serial line in an internet consumes its own unique network number.

tty Ownership in SunOS 3.0



**Sun Release 3.0 and tty
Ownership**

SunOS releases 3.0 and 3.2 include versions of `/bin/login` that do not set up the logged in user as the owner of `tty` or `pty`. The reason for this is that `/dev` must be owned by `bin` for `tty` ownership to be set correctly.

The SunOS release 3.0 version of `setup` appears to make `root` the owner of `/dev` on diskless clients. However, `/dev` is correctly owned by `bin` on diskful machines. This is being looked into. Simply changing the ownership solves the problem at this time.

Exiting Suntools: Proper Cleanup

Exiting Suntools: Improper Cleanup

You may notice that some status information is not properly written out when exiting Suntools. If you run `w` after exiting, it shows processes logged on, but with no activity, `-`, specified. The `ttys` are those that were used under Suntools. Also, the window sizes seem not to be reset.

Two separate problems are operating to cause these symptoms. The first is excess entries in `utmp` and the second is badly sized terminals. The two problems are related only in that Suntools is involved with both.

When you exit Suntools or quit a window from the `frame` command, `utmp` entries are correctly removed. However, the `utmp` entry remains when you quit a window with a process inside. `rlogin` is one example.

The second problem occurs because of the way `ioctl`-settable parameters are controlled. They are normally changed only by mouse-initiated resizing instructions. Note that if you are on a serial port or coming through the network, these parameters are not reset from 0,0 at all.

When a window is closed, the `pty` it was using is resized to 0,0; except when another process is still running on the `pty`. The terminal does not get resized to 0,0. To duplicate the problem, start a shelltool, put a `sleep 30` in the background, and kill the window. Now `rlogin` to that `pty`. Your session will behave oddly.

This problem is being looked into at this time. Please contact your sales representative for future software updates and releases.

You can run the following programs to see what the problems are.

```
#include <sys/ioctl.h>
main()
{
    struct tysize size;

    if (ioctl(0,TIOCGSIZE,&size) < 0) perror("No go");
    else printf("Size is %d, %d\n", size.ts_lines, size.ts_cols);
}
```

```
#include <sys/ioctl.h> main() {  
    struct tty_size size;  
  
    size.ts_lines = 0;  
    size.ts_cols = 0;  
    if (ioctl(0, TIOCSSIZE, &size) < 0) perror("No go");  
    else printf("Size is %d, %d\n", size.ts_lines, size.ts_cols); }
```

NFS Partitions and Read Access

NFS and Root Permissions

One of our Sun customers has pointed out a problem with protecting read access to files on an NFS-mounted partition. It is possible to look at protected `/usr/spool` files, as `root`. The customer suggested it had something to do with the nobody group permission not really being `-2`. An example is shown below.

Example One

```
lilys# /etc/mount sfsun:/usr/spool /mnt1
lilys# cd /mnt1/uucp/D.
lilys# ls
D.maceng3B036a
lilys# cat *
```

...

Subject: test

This is a uucp mail spool and should be protected! What ordinarily keeps everyone out of this file are the permissions on `/usr/spool/uucp/D.` which are:
`drwx--x--x 2 uucp 512 Mar 18 16:14 D.`

We looked into the problem and found that directory `'D.'` in the example and every directory in the path down to it has public execute permission. This means that everyone including nobody can access files residing in that directory. Only permissions on the file itself control file access.

Note that directory `'D.'` has permissions `711` so that no one but the owner can read the directory itself. Anyone else should be unable to do an `ls` on the directory, getting an error message from `ls` saying `<NAME> unreadable`. However, as example one shows, you have run into an interaction between the NFS and the local disk cache.

Example Two

A second example and explanation follow to further illustrate the problem.

The NFS permits `root` to read files without read permission. This occurs when the file happens to be in the node's local disk cache at request time. This can lead to intermittent software problems.

For example, the `sendmail` daemon runs as `root` during the initial phases of processing incoming mail. `sendmail` checks whether the target user's home directory contains a `.forward` file when mail arrives. `sendmail` also uses the `.forward` file when the target user's home directory is in a non-NFS partition. This occurs even if the file is not publicly readable. Recall that `root`'s capabilities override file permissions.

If the target user home directory is in an NFS partition, `sendmail` normally fails to find or read `.forward` unless the file is publicly readable. Note that `root`'s capabilities do not propagate across the network.

However, if someone having read access to `.forward` has read it recently, the file may still be found in the local node's disk cache. `sendmail` then reads `.forward` regardless of read permissions.

You can recreate the problem by using the procedure below.

- Create a small file in an NFS file system from a client node.
- Remove public read access from the file.
- Run a `find` command to flush the local disk cache, or wait a bit.
- Become `root`.
- Try to `cat` the file. This attempt will fail.
- Suspend the root shell.
- `cat` the file. You are now its creator.
- `fg` the root shell.
- `cat` the file. This attempt will succeed.

Now you can then take necessary steps to minimize exposure of sensitive information to unauthorized access. The interaction between NFS and read access is being looked into at this time.

Speed Reading: Write Permissions

Speed Reading and Write Permissions

A Sun customer has noticed that `read` is three times faster when reading a file without write permission than when reading with write permission. The customer demonstrated this in both Fortran and C.

This observed speed reading relates to the mode in which the file is opened, not the file permissions. Fortran always tries to open a file for update since it cannot know at opening time which operations are going to be performed. A file is opened for read-only if the file is not writable. A sample C program functions similarly. Execution times differ when the file is opened for read and not for update, regardless of file permissions.

The speed reading is a feature, not a problem. Read/write file access proceeds at the normal speed. Sequential access to read-only files is optimized to run faster. The difference results from how the file is opened, not with the file permissions. File permissions affect how the Fortran I/O library opens a file; C programs allow the operating system to enforce permissions.

Performance differences result from `stdio` library implementation. Optimizations are built into `stdio` that change the library runtime behavior when the file is known to be open for read-only. The I/O proceeds sequentially, resulting in a large difference in the number of executed system calls.

The library assumes that the buffer contents are no longer valid in the general case of a read/write file. The first `seek` finds the file pointer, the second sets it, followed by a `read` to refill the buffer. In the case of a read-only file, the `seek` finds the file pointer. Neither a second `seek` nor a `read` are required if the file pointer plus the seek offset falls within the current buffer. An example is shown below.

User Program Calls	Syscalls (read-only)	Syscalls (read/write)
<code>fseek</code>	<code>lseek</code>	<code>lseek</code> <code>lseek</code>
<code>fread</code>	<code>read</code>	<code>read</code>
<code>fseek</code>	<code>lseek</code>	<code>lseek</code> <code>lseek</code>
<code>fread</code>		<code>read</code>
<code>fseek</code>	<code>lseek</code>	<code>lseek</code> <code>lseek</code>
<code>fread</code>		<code>read</code>
<code>fseek</code>	<code>lseek</code>	<code>lseek</code> <code>lseek</code>

fread		read
fseek	lseek	lseek
		lseek
fread		read
fseek	lseek	lseek
		lseek
fread	read	read
fseek	lseek	lseek
		lseek
.	.	.
.	.	.
.	.	.

The exact patterns depends on the ratio of the `fread()` request size to the `stdio` buffer size. A performance gain is clear, however, when reading a file without write permission. Half of all `lseek()` calls and a large portion of the `read()` calls are thereby eliminated.

 X.25 and SunOS Releases **Host-to-Host X.25
Communications**

Sun implements host-to-host X.25 communications, both on current and future SunOS releases. This will include the programmer interface to X.25 when using System V libraries, and stream implementation and relation to sockets.

X.25 is implemented today as an unbundled Sunlink software product, not in a bundled OS release such as SunOS 4.0. Refer to the Sunlink X.25 Programmer's Guide for information on the software interface. Briefly, there is a socket interface at the packet level, a device driver interface to the HDLC level, and various hooks into the circuit management facilities.

The future of X.25 in SunOS 4.0 is less clear and would be only speculation at this time. Unbundled products are developed against released bundled products, and SunOS 4.0 has not yet been released. Any programmers' interface to X.25 for programs built with the System V libraries will not be any different from those built with release 4.2 libraries, except for changes necessitated by library routine differences.

Using select(): Non-Blocking Mode

Select() Used in Non-Blocking Mode

A number of applications are best implemented with an event-driven program. The process running the program waits for one of a number of anticipated events to occur, responds to the event, and then waits for the next event.

You would use the `select()` call to wait for the events. For example, you could have a network login program like `telnet` that waits for:

the user to type something on the terminal,
so it can be sent over the network to the remote host

or

some data from the remote host to come over the network,
so that it can be displayed on the terminal.

To a first approximation, the main program loop would look something like this:

```
for (;;) {
    set up the 'input' file descriptor mask to include
        the terminal and the network connection;
    select(the input file descriptor mask, ...);
    if (the network connection input descriptor is ready) {
        read some data from the connection;
        display it on the terminal;
    }
    if (the terminal input descriptor is ready) {
        read a character from the terminal;
        send it over the connection;
    }
}
```

This program can block, waiting to write to the terminal or for the network to complete sending data to the connection. The program can neither respond to data typed at the terminal nor display data from the connection on the terminal while it is blocked.

An improved program would place the terminal and network connection descriptors in non-blocking mode. It would include both descriptors in the output file descriptor mask as well. The main program loop would then look something like this:

```
set up a circular buffer for terminal output;
set up a circular buffer for network connection output;
for (;;) {
```



```

set up the 'input' file descriptor mask to include
the terminal and network connection;
if (the terminal output buffer is not empty)
    set up the 'output' file descriptor mask to include
    the terminal;
if (the network connection output buffer is not empty)
    set up the 'output' file descriptor mask to include
    the network connection;
select(the input file descriptor mask, the output file
descriptor mask, ...);
if (the network connection input descriptor is ready) {
    read some data from the connection;
    /*
    * 'Some data' means 'as much data as is immediately
    * available to read, and no more than there is
    * currently room for in the circular buffer.'
    */
    put it at the end of the terminal output
    circular buffer;
}
if (the terminal input descriptor is ready) {
    read a character from the terminal;
    /*
    * 'Some data' means 'as much data as is immediately
    * available to read, and no more than there is
    * currently room for in the circular buffer.'
    */
    put it at the end of the network connection
    output circular buffer;
}
if (the network connection output buffer is not empty) {
    if (the network connection output descriptor is ready)
        write as much of the buffer as the
        system will permit;
    /*
    * Since the socket is in non-blocking mode,
    * the system will write only as much data as
    * can be written without waiting for more
    * buffer space.
    */
    remove the data that was written from
    the network connection output buffer;
}
if (the terminal output buffer is not empty) {
    if (the terminal output descriptor is ready)
        write as much of the buffer as the
        system will permit;
    remove the data that was written from
    the terminal output buffer;
}

```

```

    }
}

```

The program only reads from a descriptor if `select` says it is ready to read it. This means that there is some data to be read. The program only writes to a descriptor if `select` says it is ready to write it. This means that there is sufficient buffer space in which to write some data.

The operation will fail either if there is no data to read, or if there is no buffer space into which to write. The calls will then return `-1` and set `errno` to `EWouldBlock`, since this condition is an error. `select` erroneously claimed that the call would be able to transfer some data.

Use the `select` call timeout if you do not want the program to block indefinitely in the `select`. For example, you might want your program to periodically check whether some event has occurred for which UNIX does not provide good notification. You might use the timeout for arrival of mail in the user's mailbox.

Alternately, rather than using `select` to wait for an object to become available for I/O, you can arrange to have a signal delivered when any of the objects you are working with become available for I/O; i.e. an object to be read from has data to read, or an object to be written to has buffer space into which to write.

This is done by setting 'asynchronous mode' on the object using the `FIOASYNC` `ioctl` call. This is sometimes referred to as 'asynchronous I/O,' but this is a misnomer. You cannot perform I/O asynchronously. You can merely arrange to be notified asynchronously that I/O can be performed.

Select() and Exceptional Conditions Pending

The `select` call can wait for an 'exceptional condition' to become pending for an object. However, in 4.2BSD, the three objects on which `select` is most commonly performed do not support selecting for exceptional conditions; these are sockets, terminals, and pseudo-terminal controllers. This limitation also exists current SunOS releases.

QUESTIONS, ANSWERS, HINTS, AND TIPS

QUESTIONS, ANSWERS, HINTS, AND TIPS 67

Q&A, and Tip of the Month 67



QUESTIONS, ANSWERS, HINTS, AND TIPS

Q&A, and Tip of the Month

Hints & Tips #2

This is the second in a continuing series of this column which I have created for two purposes.² First, some questions are asked regularly on the AnswerLine. I feel everyone can benefit from distributing discussions of these problems as widely as possible. Second, a large and constantly growing body of information, hints, and tips are not documented anywhere.

I will collect and distribute these information nuggets in this continuing column so that we can all learn from them. I will cover unusual topics, but this column should not be used as an alternative to contacting your support center or using the AnswerLine.

If you have a question that you would like answered in this column, please mail your question to 'Software Technical Bulletins' at Sun Microsystems, Inc., 2550 Garcia Avenue, M/S 2-34, Mountain View, CA 94043. You can also send in your question by electronic mail to *sun!stb-editor*. U. S. customers can call Sun Customer Software Services AnswerLine at 800 USA-4-SUN for technical questions on this column or any other article in this bulletin. I look forward to hearing from you!

Lengthy .cshrc Files

A very common problem we see in Customer Software Services (CSS) is a lengthy `.cshrc` file. Many users do not know when to use this or the `.login` file.

The `.login` file is executed one time only, when you log onto your system. This is the file where environment variables and terminal characteristics are set, and where your login programs should be run.

In contrast, the `.cshrc` program is executed every time you start a shell. Shells are started for many reasons, two of which include running shell scripts

² This continuing column is submitted by Chuq Von Rospach, Customer Software Services.

and processing file name expansion. Thus, every command you put into a `.cshrc` file is executed for every new shell that is started, making every shell slower.

To make matters worse, if you put a command into your `.cshrc` file that sends characters to the terminal, it is possible to cause a number of different programs to break. For example, programs like `rsh` and `rlogin` will stop working and report a *remote protocol botch* error. Any program that uses a shell to expand filenames will fail in different ways. `/usr/ucb/Mail` is a good example. If you give it a filename that includes a metacharacter, it will expand the filename by calling the shell with the command shown below.

```
system("echo <string>")
```

Also, if you give `Mail` the command `save $HOME/mail/bar`, it will expand and save it in the subdirectory `mail` in your home directory. If, however, you add the line

```
echo "foo"
```

in your `.cshrc`, the same command will now save the mail in file `foo` in your current directory, which is not what you want. In other cases, echoes in your `.cshrc` file will cause `mail` to return the message *Filename Ambiguous*.

What To Do

The best thing to do is make your `.cshrc` file shorter by putting everything that does not have to be there into your `.login` file. Do not execute commands in your `.cshrc` unless you have to. Check to see if you are working with an interactive shell before echoing anything to your terminal.

An interactive shell is any shell that is attached to a terminal and not to some random program. If a shell is interactive, the `$prompt` variable will be set. You can use this variable as a flag to see whether or not to execute specific commands. Use the example shown below.

```
if ($?prompt) then
    echo "Hi, mom"
endif
```

If you run a shell attached to a terminal, it will print 'Hi, mom' on the screen, but it will not break a program using the shell for its own purposes.

A final note to remember is that the shell has to read all lines in your `.cshrc` file, even if they are not executed. If your `.cshrc` file is very long, it will significantly slow execution of your programs. This even includes lines that are inside `if()` statements that are not executed.

You can work around this, though, by placing commands that may not be executed in a different file and using the `source` command. An example is shown below.

```
if ($?prompt) then
    source chuq/.../cshrc
endif
```

This `.cshrc` file will execute the full set of commands only if it is interactive. If it is not interactive, the `.cshrc` excess baggage is not read and starting a shell is now faster.

Tip of the Month - (TOM)

The software tip of the month involves a series of `vi` maps that make block operations easier by putting the following lines in your `.exrc` file.³

```
set shiftwidth=3
map @@ mt
map @D $d'tmbkmt'b
map @Y mb$y't'b
map @C mxjmb'x$c't
map @> mb>'t'b3l
map @< mb<'t'b3h
map @: mb:'t,'b
map @d d'tmbhmt'b
map @y mby't'b
map @c mbc't
map @T 't
map @B 'b
```

In case you're wondering what all the gibberish is in the map commands shown above, most of it is an attempt to do something reasonable with your cursor position wherever possible.

This will create the following two-character commands:

@@ The current cursor position is marked as the 'top' of the block on which you want to operate. Then move the cursor to the 'bottom' of the block and give one of the commands shown below.

@D Delete all lines of the block.

@Y Yank all lines of the block.

@C Delete all lines of the block and enter input mode.

³ This month's tip is submitted by Joe Petolino, Senior Hardware Engineer

@> Shift the entire block right by <shiftwidth> number of characters.

Note that the <shiftwidth> value is set in the first of the lines you added in your .exrc file above, three in this case. This or some other value has to be coded directly in the definitions for your new @> and @< commands.

@< Shift the entire block left by <shiftwidth> number of characters.

@: Enter ex command input mode after defining the block for the ex command.

For example, @:w foobar<return> will write the block of lines into a file named foobar.

@d Like @D, but operates on blocks of characters, not blocks of entire lines.

@y Like @Y, but operates on blocks of characters, not blocks of entire lines.

@c Like @C, but operates on blocks of characters, not blocks of entire lines.

@T Return the cursor to the 'top' of the block, as defined by the last @@ command.

@B Return the cursor to the 'bottom' of the block, as defined by the last @* command (where @* = @D, @Y, and the like).

I Want Your Hints, Tips, and Folklore

Again, if you have a tip for this column, you can submit it to *sun!stb-editor*. See you next month!

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IN DEPTH

SunOS 3.3 Subnetting

**SunOS Release 3.3,
Subnetting, and Restrictions**

SunOS release 3.3 contains network subnetting. This article is intended to familiarize you with what subnetting is, in a general sense, and to introduce you to how it will be handled, with certain restrictions, in SunOS release 3.3.

The information presented in this in-depth article is taken from the Defense Advanced Research Projects Agency (DARPA) Internet Standard Subnetting Procedures specification and SunOS 3.3 release notes.

**Subnetting: Basic Questions
and Answers**

Before getting into the details, we can look at subnetting by answering commonly asked questions.

□ What are subnets?

Subnets are logically visible, sub-sections of a single Internet network. Many customers have chosen to divide one Internet network into several subnets for administrative or technical reasons.

□ Why would I want to use a subnet?

Many customers find that they need more network addresses than otherwise can be provided. They then divide the net address into subnet addresses and fit many more nodes into the same network address as originally provided by ARPA or the Department of Defense (DoD).

Another reason to use a subnet is to reduce routing of redundant information. Many Internet sites have a large group of Internet Protocol (IP) networks and a direct connection to the ARPAnet or MILnet backbone. The gateway host has to export *all* internal network numbers to the Internet, usually using the Exterior Gateway Protocol (EGP). This is needed so that hosts on the

internal net can route IP datagrams to other sites on the backbone via the gateway. However, this routing turns out to be useless information since internal networks must be reached from the backbone via the gateway machine anyway.

Using subnets allows the gateway machine in this example to export a *single* IP network to the rest of the Internet, making itself the route by which other sites access that network. When the incoming IP datagram arrives at the gateway host, it is then treated as a subnet address and routed normally through the internal network.

- What addressing and subnetting scheme could I use?

Many customers choose Internet addresses from ARPA/DoD, instead of just choosing addresses randomly. The subnetting scheme that the ARPA community and Sun has chosen is the 'address mask' approach.

- What security advantages does subnetting provide?

There is no security difference. The main advantage is that you get more hosts online with fewer net addresses.

- Will subnetting function like running with the `routed -q` option on a network gateway system? Will users be forced to `rlogin` to the gateway system to get to machines 'on the other side' of the gateway?

No. You should be able to `rlogin` to any machine, just like running `routed` normally. No multiple `rlogins` are required.

The Address Mask Approach: Class A and Class B

Two address classes are used in the address mask approach to subnetting. Class A and B addresses are described below.

- Class A Compare the normal, non-subnetted class A address with the subnetted class A address shown below.

36.0.0.62 (0x24.00.00.3e)Non-Subnetted
36.40.0.62 (0x24.28.00.3e)Subnetted

The address mask for the address field portion constituting the network address for the subnet case is shown below:

255.255.0.0 (0xFF FF 00 00)

This means that the net part of the number and host number are each 16-bits wide.

Class B Compare the normal, non-subnetted class B address with the subnetted class B address shown below.

128.99.0.123 (0x80.63.00.7b) Non-Subnetted
128.99.4.123 (0x80.63.04.7b) Subnetted

The address mask for the address field portion constituting the network address for the subnet case is shown below:

255.255.252.0 (or 0xFF FF FC 00)

This means that the net part of the number is 22-bits wide and that the host part of the number is 10-bits wide.

The subnet mask must be the same on all subnets having the same IP network number. Take, for example, the IP network number x80.9b.0.0 or 128.155.0.0 as it is usually given in decimal. The default class B network mask would be 255.255.0.0, but with subnets the mask would be something like 255.255.255.0. Thus 128.155.24.x and 128.155.25.y are two different subnets of the same network.

Compare this example to those of 128.32.1.1 and 128.32.2.1 (Berkeley's numbers) given in the SunOS release 3.3 manual. This *is supported* in SunOS release 3.3, since it is only one non-standard network mask, 128.155 with 255.255.255.0. You can also have interfaces to any number of other non-subnetted (i.e. default netmask) networks.

One case not allowed in release 3.3 is two different subnetted networks interfaced to the same machine. That is, 128.32.1.2 and 128.155.24.1 on the same machine will not work in release 3.3.

You cannot, however, always know if an address is subnetted by simple inspection of the middle bytes. You can have subnet addresses containing middle bytes of zero (36.0.0.62, subnetted). You can also have non-subnetted addresses containing non-zero middle bytes (36.40.0.62, non-subnetted). Note that a zero subnet number is outside the DARPA Internet specification, but most implementations do not check for this. You can tell if a net is subnetted for sure only by inspecting the mask since subnetting is transparent outside of that network.

SunOS Release 3.3 Subnetting Limitations

The default address masks are shown below. Note that net masks must only be explicitly specified when they are "wider" (that is, have more one-bits) than the default values.

0xFF000000 (255.0.0.0) Class A
0xFFFF0000 (255.255.0.0) Class B
0xFFFFFFFF00 (255.255.255.0) Class C

It is important to note that all interfaces with non-default subnet masks must be

on the same IP network. They may, however, be on different subnets. In other words, there cannot be more than one subnetted network interfaced to any machine. Usually, a workstation will be on only one subnet; a server will be a gateway between subnets of the same net, and possibly other non-subnetted networks. For instance, SunOS release 3.3 will gateway between two or more subnets of the same network, and will gateway between any number of subnets of the same network, as well as between any number of non-subnetted networks.

The only case not supported in SunOS release 3.3 is when you have more than one non-standard network mask, which would mean interfaces to subnets of two *different* IP networks. Interfaces to different subnets of the same network, or non-subnetted networks, may be freely intermixed in release 3.3.

Examples for class A and B networks are shown below.

128.32.0.0 class B network (subnetted)
netmask 255.255.255.0

36.0.0.0 class A network (subnetted)
netmask 255.255.0.0

10.0.0.0 class A network (non-subnetted)
netmask 255.0.0.0

128.32.1.1 and 128.32.2.1 and 10.0.0.78
are legal for SunOS Release 3.3
(two subnets of same net
+ non-subnetted network)

36.8.0.8 and 36.10.0.1 and 10.0.0.11
are legal for SunOS Release 3.3
(two subnets of same net
+ non-subnetted network)

128.32.1.1 and 128.32.2.1 and 36.8.0.8
are NOT legal for SunOS Release 3.3
(two subnets of same net
+ another subnetted network)

SunOS release 3.3 also fixes the broadcast problem. Some IP implementations send broadcasts with a normal, or subnet, network field. They send a host field for all-ones, however. This is correct and within the IP specification. It may, however, cause early Sun software to essentially bring the net down by broadcasting ARP requests for host 255.

Note that all-one host numbers, x.y.z.255 for class C nets for one example, work in previous SunOS releases, even though they are outside the IP specification. All-one host numbers are treated properly, as broadcast, starting with SunOS release 3.3.

In summary, do not use all-ones in the host portion of any host addresses. For example, host 255 is illegal in a class C network.

Enabling Subnets

The kernel modules required to support subnets have been changed in SunOS release 3.3. `/etc/ifconfig` and `/etc/in.routed` have also changed. `/etc/in.routed` now manages the new routing tables. `/etc/ifconfig` now has a new option to set the network mask.

For example, let us say you have a class B network 128.32 that has an eight-bit wide subnet field, therefore an eight-bit wide host field, and a server that is both host 1 on subnet 37 and host 100 on subnet 3. The lines appearing in your `/etc/rc.boot` would then be as shown below.

```
/etc/ifconfig ie0 128.32.37.1 netmask 255.255.255.0 -trailers up  
/etc/ifconfig ie1 128.32.3.100 netmask 255.255.255.0 -trailers up
```

Note that symbolic names defined in `/etc/hosts` can be used in lieu of the 128. ... numbers shown above.



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CUSTOMER DISTRIBUTED BUGSLIST

Customer Distributed BugsList

Here is our newly reformatted quarterly version of the Customer Distributed BugsList (CDB). We've implemented many of the improvements suggested by our readers. Hence, this quarter's issue boasts of not only a new, more Sun-like look, but also a full reorganization and new policies on content.

Organization

The Customer Distributed BugsList is again divided into two parts: open bugs in SunOS and open bugs in other Sun software products. However, we've reorganized the sections, sorting by topic and then by subtopic, to make them easier to use.

Individual Entries

Each entry in the Customer Distributed BugsList consists of the Reference Number of the bug, a one-line synopsis of the bug, the release(s), a description of the bug, and a workaround for the bug where it is available. The Reference Number is a new addition to the CDL entries. If you have a question for your support center about a particular entry, use this number to identify the bug. The release(s) is that in which the bug was reported. This document includes SunOS 3.3 and earlier releases. Entries showing releases beta, gamma, and pilot are still open at the time of first customer ship of the release. The description of the bug includes the problem, examples of the problem where available and succinct, and the configuration where applicable.

Content

The entries were extracted from our database on 4/24/87. A change from our first list is that we are eliminating bugs that have not been through the Sun evaluation process. Of those remaining some bugs were eliminated based on the following criteria:

1. The entry was not considered to be a bug, but an in-house request for enhancement.

2. The bugs referred to in-house situations only.

Closed bugs

For information on which bugs are closed in the upcoming 3.4 release (when your upgrade arrives), see chapter 6 of the 'Release 3.4 Manual for the Sun Workstation'. For customers having supported SunUNIFY, see the 'SunSimplify 1.0, SunUNIFY 2.0 Release Status'. This document is included on the SunUNIFY 2.0 release tape in 'unify/release_notes/release_status'.

Compilers

SunOS

Compilers
Assembler

Reference Number: 1003562

Synopsis: Missing Diagnostic - table overflow for switch statements
Release: 3.2

Description:

By default, the compiler/assembler generate 16 bit jump tables for switch statements. If the switch statement is so big that it doesn't fit in 16 bits, bad values are placed in the jump table, causing incorrect code. Some combination of the compiler and/or assembler should warn that this has occurred.

As of 3.2, the compiler supports the -J flag, which causes the compiler/assembler to generate correct code, but the compiler/assembler doesn't inform you that the -J flag is necessary.

Work around:

The -J flag generates correct code.

Reference Number: 1003597

Synopsis: "as" core dumps when asked to divide by zero
Release: 3.3, 3.2

Description:

If you have an expression in an assembler-language program that attempts to divide by zero, instead of catching this and printing an error message, it continues, does the division, and core dumps. This was discovered through use of an incorrect Makefile. The Makefile did not run the assembly source through the C preprocessor, and somehow this caused it to see code that did a divide by zero.

Reference Number: 1003869

Synopsis: using -mc68010 and -R on command line can make /bin/as core dump
Release: 3.2

Description:

If the user executes /bin/as using both the -mc68010 and -R options, the result is a core dump. The sample assembly file is one line long:

```
largo% more z.s  
      tstb  0xe00008
```

```
largo% /bin/as -mc68010 -R z.s  
Segmentation fault (core dumped)
```

Using either -mc68010 or -R alone will not cause this error.

Reference Number: 1003951

Synopsis: as broke on 68881 branch codes
Release: 3.2

Description:

If the pseudo branch's length differs from the real length, /bin/as core dumps on jumping to absolute address and phase error

The following one-line program causes /bin/as to core dump:

```
fjeq 30
```

The following three-line program causes /bin/as to have a phase error:

```
fbnel L33  
.skip 380  
L33:
```

C Compiler

Reference Number: 1002757

Synopsis: C compiler core dumps on simple syntax error
Release: 3.2fcs

Description:

The C compiler core dumps on the following simple C program which has a syntax error (attempting to print a member of a two dimensional array by only using the row index).

```
char foo[3][256] = { "one"; "two"; "three"; };  
main()
```

```

{
    int i;
    for (i = 0; i < 3; i++)
        printf("%s0, foo[i]);
}

```

Reference Number: 1002825

Synopsis: C compiler removes .o files unnecessarily

Release: 3.2

Description:

The C compiler should not remove .o files.

Reference Number: 1003017

Synopsis: "cc -a" (tcov profiling) bug

Release: 3.0, 3.2fcs

Description:

"cc -a" gives the following error message when C code contains a local definition for a pointer to an array of doubles:

```
is_func is confused 91 [ [
```

For example, the program foo produces the aforementioned error message when compiled with "cc -a -c":

```

foo()
{
    double (*bar)[5];
}

```

Work around:

Use typedefs. Example:

```
typedef double array[5];
```

```

void
foo()
{
    array *bar;
    ...
}

```

One might argue that this is better coding practice anyway, irrespective of tcov quirks.

Reference Number: 1003680

Synopsis: bit fields in structures broken

Release: 3.2

Description:

There is an error in the code generator routine in C for evaluating bit field expressions. There are many special cases in the code generator routine. This particular bug is in the case where a bit field is compared against the integer constant value 0.

The specific problem in the following program is that the code generator routine assigns a long rather than a byte in case 0 of the switch statement.

Compile the following file "cc -S t.c"

```
typedef struct a {
    int b:1;
    int c:3;
    int d:4;
    char e;
    short int f;
    int h;
} i;

Equal (p,q)
i p, q;
{
    switch (p.c) {
        case 0:  return (q.c == 0);
        case 1:  return (q.c == 1);
    }

    return (0);
}

main ()
{
    i a, b;

    a.c = 0;
    b.c = 3;

    Equal (a,b);
}
```


Reference Number: 1004157

Synopsis: brk and sbrk are incompatible in gprof-profiling

Release: 3.2

Description:

The call to brk(2) in the following program seems to be ignored by sbrk when the program is compiled with the -pg option.

```

bach% cat tst.c
main()
{
    printf("%x\n", sbrk(0));
    printf("%x\n", brk(0x100000));
    printf("%x\n", sbrk(0));
    printf("%x\n", sbrk(0x50000));
    printf("%x\n", sbrk(0));
}
bach% make
cc tst.c -o tst1
cc -pg tst.c -o tst2
bach% tst1
22e04
0
100000
100000
150000
bach% tst2
2bdd0
0
2ddd0
2ddd0
7ddd0
bach%

```

The problem here is that gmcrto.o has its own version of brk(), which is global, and its own version of curbrk, which is not. The brk() call updates its local curbrk, and thus fails to communicate with sbrk().

Reference Number: 1004403

Synopsis: bit field assignment and comparison fails

Release: 3.2

Description:

The following code shows an instance in which the C compiler does not properly represent the result of field assignments. The code produces the line "fails", rather than "succeeds":

```

struct {
    int b : 8;
} s;
main()
{
    if ((s.b = 0xff01) != 1) {
        printf("fails\n");
    } else {
        printf("succeeds\n");
    }
}

```

Work around:

Do the assignment on a line before the test.

Reference Number: 1004502

Synopsis: sscanf %c & %[conversions corrupt return address.

Release: 3.2

Description:

The following program expects arguments that consist of <number> <whitespace> <rest-of-line> and use sscanf() to split the argument. When the argument is erroneous (eg. starting with a non-digit character) a 'bus error' occurs on the return to main.

```

main( argc, argv)
char** argv;
{
    while (*(++argv)) {
        int n0, n1;
        char s[100];
        *s = '\0';
        n0 = sscanf( *argv, "%d %100c", &n1, s);
        printf( "%d %d '%s'\n", n0, n1, s);
    }
}

```

Reference Number: 1004517

Synopsis: modulus operator returns an incorrect value

Release: 3.2

Description:

The following C program shows that mod by 1 with assignment ($x \% = 1$) is not compiled correctly.

```

main()

```

```

{
int I = 5;
int J = 5;
int K = 1;

I %= 1;
J %= K;

printf("%d %d\n", I,J);
}

% test
5 0

```

Reference Number: 1004564

Synopsis: ccom fails to convert to unsigned in comparison

Release: 3.2

Description:

In the following program, the compiler fails to change the comparison to an unsigned one and thus the program incorrectly produces the following line:

x (126) > y (128)

```

main()
{
    unsigned char x;
    unsigned char y;
    x = 126;
    y = 128;
    if ((int) x > (int) y) {
        printf("x (%d) > y (%d)\n", x, y);
    } else {
        printf("x (%d) <= y (%d)\n", x, y);
    }
}

```

Reference Number: 1004497

Synopsis: "cc -a" causes core dump of core dump in C compiler
Release: 3.2

Description:

When "cc -a" is attempted on some files, the result is a segmentation fault and core dump in bb_count, one of the phases of cc where code is inserted to generate information used by TCOV.

Work around:

This is a result of errors in "bb_count" (one of the phases of cc where code is inserted to generate information used by TCOV). "bb_count" is called after "cpp"(the C pre-processor) and before "com"(scanner- parser-intermediate code generator of the C compiler). When "cc -a" is attempted on some files, cc complains about syntax errors in the source which are unwarranted.

Debuggers

Reference Number: 1001671

Synopsis: dbx routine eval.c causes dbx to panic on a popsmall
Release: 3.0

Description:

In the dbx routine eval.c if a popsmall is a condition dbx will panic and exit. This however, is a condition that is legal and can happen.

Reference Number: 1001693

Synopsis: 3.2beta dbx core dumps with large files
Release: 3.2beta

Description:

When using dbx with a large file (38000 lines), dbx will core dump.

Reference Number: 1001696

Synopsis: dbx doesn't understand Sun a.out files
Release: 3.2pilot

Description:

If you run dbx against an executable image and a core file, it doesn't understand that the text addresses run from N_TXTADDR(header) to N_TXTADDR(header) + core.c_tsize. It thinks that the data segment starts at core.c_tsize.

Reference Number: 1001702

Synopsis: dbxtool uses wrong filename after "up"/"down" and won't set breakpoint

Release: 3.2pilot, 3.2

Description:

After stopping at a breakpoint in dbxtool, I do "up" one or more times, select a line, and attempt to set a breakpoint using the "stop at" button. The "expand" feature for this button generated:

stop at "../src/gp1_prims.c":80

causing dbx to complain:

file "../src/gp1_prims.c" was not compiled with the "-g" option

I continued stepping through the subroutine I was in, and upon return was in the function I wished to breakpoint (ie. same level that "up" took me to previously). The "stop at" button then generated:

stop at "../src/gp1_prims.c":80

and dbxtool set the breakpoint.

Work around:

This bug occurs only in dbxtool. Hence, dbx can be used if the feature outlined above is desired.

Reference Number: 1001710

Synopsis: dbx prints multiple lines

Release: 3.2beta

Description:

If you have multiple "stop at" or "when at" statements and the trace statement is within the range of these "stop at" or "when at" statements then the run will print that number of trace statements. eg: 4 "stop at" statements, 4 "trace" statements.

Reference Number: 1004308

Synopsis: adb -w byte swaps char string writes to executables

Release: 3.2

Description:

If you write a word in an executable using a 4 byte character string as in the example that follows, the result is byte swapped.

Note: The example shows that the W instruction in adb now works intuitively, but the C compiler still behaves in VAX fashion when given multiple-character constants by giving a result of "badco".

```
zeus>> more t.c
char str[]="hello perry";
```

```

main()
{
    printf("%s\n,str);
}
zeus>> cc t.c
zeus>> adb -w a.out -
str?s
_str:
_str:    hello perry
str?W 'abcd'
_str:    0x68656c6c  =    0x62616463
str?s
_str:
_str:    badco perry
$q
zeus>>

```

The result should be "abcdo" rather than "badco".

Work around:

Use Hex.

Reference Number: 1004472

Synopsis: dbx "print" fails on odd-sized doubly-subscripted arrays
Release: 3.2

Description:

When printing out the contents of a doubly-subscripted character array, characters are lost. For the first array element, the first character in the string is not printed. For the second array element, the first two characters are not printed, etc. If you change the array size to an even size, it will work fine.

Reference Number: 1004493

Synopsis: dbx internal error blocks you out from using dbx
Release: 3.2

Description:

dbx does not work correctly with Pascal programs that have private routine extensions when the private routine name comes before its parent routine name in the symbol table. When dbx is used with this type of program, it gives the following error message and exits:
dbx: internal error: entersym(2): nested Pascal proc error

Fortran Compiler

Reference Number: 1000214

Synopsis: ioinit(3F) does not work as documented.

Release: 1.1, 1.4, 2.0beta

Description:

ioinit(3F) is said to 'initialize several global parameters in the f77 I/O system, and attach externally defined files to logical units at run time.' Customer is porting software that opens and closes a port and then later again opens and closes it again. Customer wants to use ioinit(3F) to set the filename for the duration of the program run for particular logical unit numbers.

Work around:

Work around is to call ioinit before each open.

The fix should be to change ioinit or f77 to 'remember' the file name between opens, or a less satisfactory solution, change the documentation to reflect this limitation.

Reference Number: 1000271

Synopsis: calling ioinit as per doc. causes link error

Release: 3.0, 3.2pilot

Description:

When you call ioinit as documented on the Fortran page ioinit(3f). You get linker undefined errors. Here are the errors:

Undefined:

_s_cmp
_i_len
lnblnk
_i_indx

Note: these are all routines from libF77a.

Work around:

cd to work directory.

ar x /usr/lib/libI77.a ioinit.o

now ioinit is in your current working directory

f77 *.f ioinit.o

You will no longer have these undefined errors.

Reference Number: 1002583

Synopsis: Fortran in uppercase and dbxtool incompatible

Release: 3.0

Description:

subroutine dumarg(proc)

C When this routine is compiled with "f77 -g name.f", the

C compiler complains it cannot get dbx basetype information

C for proc. The trouble disappears if the implicit
 C statement is removed or "-g" is not used.
 C It can be circumvented by adding an "integer proc" statement,
 C but FORTRAN subroutine names should not have types.
 implicit undefined (A-Z)
 external proc
 call proc
 end

FORTRAN standard is uppercase letters. The compiler accepts the uppercase and by default converts to lowercase. Compilation is clean and all seems well until you use dbx or dbxtool. Neither of the debuggers recognizes the uppercase variables (when pointed at) but they may be displayed (etc.) by hand typing them in lower case. dbxtool is no longer a graphics debugger but becomes equivalent to dbx+.

If the -U switch is used, compiler keywords such as "OPEN" are no longer recognized.

Work around:

Use UNIX "tr" command on all source before compiling.

Reference Number: 1002618

Synopsis: the -C option can cause f77pass1 to core dump
 Release: 3.2, 3.2pilot, 3.0

Description:

Fortran77 does not handle reads from internal files correctly:
 f77pass1 core dumps upon compilation.

Reference Number: 1002628

Synopsis: dbx prints wrong value for real array cells
 Release: 3.2pilot, 3.0

Description:

When the following Fortran program is compiled with the -g option for the debugger, the values of the array 's' are printed incorrectly.

```

program total
parameter(np=158,nps=128)
dimension s(np)

data (s(i),i=1,np)/np*0/

open(unit=1,file='s.dat')
```



```
read(1,*)(s(i),i=1,nps)
close(1)
```

```
print *,s
end
```

The compiler places variables in either the initialized data area or the un-initialized data area depending on whether they have been initialized. All variables in the un-initialized data area have an initial value of 0. When an array is initialized to all 0's, the compiler realizes it can place the array in the uninitialized data area (this makes the object file smaller). However, the debug information it generates says the array is in the initialized data area so dbx has the wrong address of the variable. The code generated by the compiler is correct.

Work around:

Remove the DATA statement, it is not needed on a Sun when the array is being initialized to all 0's.

Reference Number: 1002658

Synopsis: character strings assigned to dimensioned variables causes f77 error
Release: 3.2pilot

Description:

The following code has conversion errors, but should cause the 3.2PILOT f77 compiler only to generate an error message. However, the compiler dies giving the following error message:

"Compiler error"

```
subroutine plabak
dimension wprt(3)
wprt(1) = 'del'
wprt(2) = 'p/pm'
wprt(3) = 'ax '
thetr = thetar*180./pi
return
end
```

The error messages are:

f77 -O -c smalbug.f

smalbug.f:

plabak:

Error on line 3 of smalbug.f: impossible conversion

Compiler error line 3 of smalbug.f: Impossible tag error
in routine map_fortnode

Reference Number: 1002926

Synopsis: REAL PARAMETER produces confusing error message

Release: 3.2fcs

Description:

Using a REAL parameter for an array dimension produces the error message "adjustable dimension on non-argument". This is confusing. For example, the following program fails:

```
parameter (arrsize=1000)
dimension arr(arrsize)
end
```

The error message is: "Error on line 3 of pararr.f: Declaration error for arr: adjustable dimension on non-argument".

The following program succeeds:

```
parameter (iarrsize=1000)
dimension arr(iarrsize)
end
```

Reference Number: 1003404

Synopsis: f77pass1 seems to infinitely loop on program

Release: 3.2

Description:

This problem occurs in programs which have a very large number of EQUIVALENCE statements which overlap the same variable. The algorithm used to compute the overlap uses a lot of memory which it does not free.

Work around:

Breaking up the subroutines into separate files will help if more than 1 subroutine has equivalence statements. Changing the EQUIVALENCE statements so that they do not overlap will also help. For example:

```
COMMON /CBLOCK/ ARR(10000)
EQUIVALENCE (X1,ARR(1)), (X2,ARR(100)), (Y1,ARR(5001)), (Y2,ARR(7000))
```

can be changed to:

```
COMMON /CBLOCK/ ARR1(5000), ARR2(5000)
EQUIVALENCE (X1,ARR1(1)), (X2,ARR1(100)), (Y1,ARR2(1)), (Y2,ARR2(2000))
```

Note: This work around will not be helpful in all cases.

Reference Number: 1003511

Synopsis: specifying `\\` does not work in strings

Release: 3.2, 3.0

Description:

The following program and its output illustrate that specifying `\\` does not work in strings:

```

CHARACTER STR1*(*), STR2*(*), STR3*(*), STR*22
PARAMETER (STR1='abc', STR2 = 'd\\e', STR3 = 'fg')
STR= STR1//STR2//STR3
WRITE (6,*) STR
WRITE (6,*) STR2
C  \\s in a Format string literal do work okay...
  WRITE (6,20)
  20 FORMAT ('abc\\def')
  END

```

This produces:

```

% a.out
abcdefg
de
abc\\def
%

```

You would expect:

```

% a.out
abcdefg
d\\e
abc\\def
%

```

Work around:

Use `\\\\` instead.

Reference Number: 1003728

Synopsis: Mixed C and Fortran causes segmentation violation

Release: 3.2

Description:

The following mixed Fortran and C program gets a segmentation when it exits. This problem occurs because in a C main program, the FORTRAN run-time initialization routine does not get called. Without this call, a pointer to the table of open files does not get initialized. As a result, the run-time libraries attempt to de-reference a null pointer.

```

-----main.c-----
main()
{

```

```

zq_();
}

MAIN_(){}

-----q.f-----
subroutine zq()
stop
end
-----

```

Work around:

Call the procedure `f_init()` in the `c` main program (it takes no arguments). this will initialize the appropriate run-time library data structures.

Reference Number: 1003979

Synopsis: extra spaces generated when writing to internal files

Release: 3.2

Description:

The problem with the following program is that on list directed output two extra blanks are inserted preceeding a character value.

```

-----t.f-----

common / x / label(80)
character*80 lab
character*1 label(80)
equivalence (lab,label)
real time
time = 7.8
write(lab,131) time
131 format(f7.3)
print *,label,'helen'
end

```

Here's the output which shows the problem:

```
7 . 8 0 0
```

Work around:

Equivalence a character string to the array which is as long as the array and write the string instead of the array.

Library

Reference Number: 100077

Synopsis: "getwd()" library routine

Release: 3.0

Description:

The `getwd()` routine in the standard C library uses "`stat()`" rather than "`lstat()`" to search for the component segment names in the path to the current working directory. Most of the time, due to the normal order of file creation in a directory, `getwd()` finds the real directory entry first. But on occasion it will find a symbolic link to the directory, and by using "`stat()`" rather than "`lstat()`" will decide to report the symbolic link as the "correct" pathname component. In addition to causing even more randomness in the result of a `getwd()` call, this usage interacts badly with symbolic links to NFS mount points when a particular NFS server is not responding.

Reference Number: 1004297Synopsis: `putw()` returns ferror instead of word putted.

Release: 3.2

Description:

`putw(word,stream)` returns an integer value which is returned by `ferror()`. `putw()` should return the word that was written out to the stream.

example:

```
main() {
    int x;
    FILE* file;
    int c='47';

    if (file1 = fopen("myfile",RW) == NULL) exit;
    x = putw(c, file1)
}
```

The returned value for this successful `putw()` call was '0', when the user expected '47' based on the Kernigan and Ritchie standard.

This is a documentation bug because the value of 'ferror' would be the correct return value for 4.2BSD.

lint

Reference Number: 1002091

Synopsis: lint misses structure mismatches

Release: 3.0

Description:

Running lint on a program which passes a structure to a routine which expects a different structure of the same size does not generate a diagnostic. This contradicts the Type Checking section of "C Language Tools" chapter of the Programming Utilities Manual:
 ... all actual arguments must agree in type with their declared counterparts.

Reference Number: 1002841

Synopsis: lint "-n" flag can't be bundled with other flags

Release: 3.2

Description:

"lint" has a "-n" flag that tells it not to check functions against the definitions in the "lint" library for the standard C library. In the old "lint" shell script, the "-n" flag could be bundled with other flags, so that "lint -hbxn" would set the "-n" flag as well as the "-h", "-b", and "-x" flags. This does not work with the new "lint" command, implemented as a symbolic link to "/lib/compile".

Work around:

Keep the "-n" option separate; in the case given, use "lint -hbx -n test.c" instead of "lint -hbxn test.c".

Optimizer

Reference Number: 1003153

Synopsis: Fortran code generator bug

Release: 3.2

Description:

The following Fortran program works correctly when compiled without the optimizer option (-O) and incorrectly when compiled with the optimizer.

```
integer xsen, ysen
real c(2,1), cm(2,1)
c(1,1) = 1.0
c(2,1) = 2.0
xsen = 1
yсен = 2
j = 1
cm(xsen,j) = c(xsen,j) + c(yсен,j)
cm(yсен,j) = c(yсен,j) - c(xsen,j)
write (*,*) cm(1,1), cm(2,1)
```

end condition	behavior
----- compiled without "-O" under 3.0, 3.1 (not tested), or 3.2	cm(1,1) set to 3; cm(2,1) set to 1
compiled under 3.0 or 3.1 (3.0 verified, 3.1 not) with "-O"	cm(1,1) set to 0; cm(2,1) set to 1
Compiled under 3.2 with "-O", run on Sun-3/50	cm(1,1) set to 0; cm(2,1) set to 1
Compiled under 3.2	crashes with segmentation violation with "-O", run on Sun-3/260

Work around:

Note that the above code will compile correctly with the -O option if the order of the operands for the addition is changed. In other words, change the following line:

$$cm(xsen,j) = c(xsen,j) + c(ysen,j)$$

to this:

$$cm(xsen,j) = c(ysen,j) + c(xsen,j)$$
Reference Number: 1003602

Synopsis: fortran optimizer causing IOT trap errors

Release: 3.2, 3.0

Description:

Occasionally, the Fortran optimizer fails and gives IOT trap errors due to complicated expressions in the Fortran code.

Work around:

Splitting the complicated expressions into parts with assignments to local variables works. For example,

$$sx(n) = (rs(is1+n1-1)+2.5*sx(n1)-1.5*sx(n1-1))*0.5$$

could be rewritten as

$$kludge = is1+n1-1$$

$$sx(n) = (rs(kludge)+2.5*sx(n1)-1.5*sx(n1-1))*0.5$$

A safer work-around is to make the broken subroutine into a separate compilation unit, and compile separately without -O.

Utilities

Reference Number: 1002668**Synopsis: cpp doesn't handle 2 macros broken over lines****Release: 3.2, 3.2pilot****Description:**

The machine produced code shows a bug in the cpp processor. cpp cannot handle calls from a macro that are broken over two lines.

```
#define ASSIGN(x, y) x = y;
```

```
foo()  
{  
  ASSIGN(a,  
  b->c);ASSIGN(j,  
  k->l);  
}
```

it produces the following output:

```
% cc -E foo.c  
# 1 "foo.c"
```

```
foo()  
{  
  a = b->c;;# 7 "foo.c" <--- this is the bug  
  j = k->l;;  
# 8 "foo.c"  
}
```

Work around:

Don't break calls from macros over 2 lines. However, this is difficult when code is machine generated as in this case.

 Datacomm

Datacomm
bsc3270

Reference Number: 1003789

Synopsis: pe3287 dies with panic(3) when run with bsc3270
Release: sunlink3.0

Description:

Users trying to send output to printers that they have defined in the BSC 3270 environment will not succeed. pe3287 dies with a panic code of 3 because its buffer size is too small.

Work around:

Patch tape available from Technical Support.

Reference Number: 1003791

Synopsis: pe3287 dies with panic(839) with WSF
Release: sunlink3.0

Description:

In the VM environment, occasionally a WSF gets sent to the pe3287, causing pe3287 to do a panic(839).

bscrje

Reference Number: 1000319

Synopsis: Gateway does not time out a connection if waiting for data frame
Release: sunlink1.0

Description:

If the gateway is waiting for a data frame, it will not timeout if the sender goes away. Normally, DSR would tell us that the sender had terminated, but we cannot monitor DSR in synchronous mode. The driver and the state tables should be changed to set a long (-to) timer value and disconnect if the timer expires.

Reference Number: 1000323

Synopsis: two gateways with the same name can cause confusing errors
Release: sunlink1.0

Description:

Starting up two gateways with the same name can cause confusing errors. If the system administrator starts two rjebcs programs with the same "name", the rjemapper process will remember the second one. However, the

first one is probably the one that will successfully start up. The rje user will get "gateway not responding" if he tries to use the rje command because it will try to communicate with the second instance. This problem could be minimized by moving the code that registers the process with the rjemapper further down in the startup code (preferably after the process tries to open /dev/bsc*).

Reference Number: 1000324

Synopsis: Baud rates below 9600 baud cannot be set with syncinit

Release: sunlink1.0

Description:

Baud rates below 9600 baud cannot be set with syncinit. Syncinit cannot set the baud rate below 9600 due to a bug in zs_bsc.c. The variable tconst should be an unsigned short.

Reference Number: 1000325

Synopsis: HASP compression will put in extra char

Release: sunlink1.0

Description:

In the HASP compression mode, 'rjebc' will put in an extra character if the last character is a duplicate character. e.g., 'go to 100' becomes 'go to 1000'.

Reference Number: 1003653

Synopsis: HASP: Wait-a-bit doesn't always work

Release: sunlink3.0

Description:

There are several problems with the handling of the 'wait-a-bit' bit in HASP mode. First, if an ACK is received, the 'wait-a-bit' bit is not cleared. This causes the connection to hang until the host sends more data (which may never occur). Second, when the 'wait-a-bit' happens, the code sets all the devices to busy rather than just setting the bit in the data structure reserved to indicate that a 'wait-a-bit' has occurred.

Reference Number: 1003654

Synopsis: HASP: back-to-back operator commands may cause dump
Release: sunlink3.0

Description:

If you submit two "keyboard" commands so quickly that the second is queued before the first was sent, the second keyboard command is lost. An error message sometimes appears, and in some cases, the 'rjebc' process dies with an address fault.

Work around:

Only submit one operator command at a time and wait for any host response before sending next command.

Reference Number: 1003656

Synopsis: HASP: on a busy Sun system, rjebc may get out of sync
Release: sunlink3.0

Description:

On a busy system, when the Sun cannot respond within three seconds, it is possible for the 'rjebc' to get "behind" the host. This occasionally causes an "out of sequence" error to be reported by the host.

Reference Number: 1003658

Synopsis: bscrje terminates with bsc driver error -1 or panic
Release: sunlink3.0

Description:

Occasionally, the rjebc process terminates unexpectedly with a read error on the bsc driver. This problem occasionally causes a panic (address error 0x8). These two problems occur most frequently on heavily loaded machines.

dna

Reference Number: 1003814

Synopsis: When a server reboots, all diskless clients running DNA hang
Release: sunlink4.0

Description:

If a server that is serving diskless clients running SunLink DNA crashes or is halted/rebooted in any way, the diskless clients running DNA will hang.

Work around:

Edit the /etc/rc.local file to invoke the following script at boot time *after* the nd command is executed.

```
#!/bin/csh -f
#
#   JFC 1/9/87;   Fix the arp table on a server that has diskless
#                 clients running SunLink DNA so that the DNA clients
#                 will not hang after the nd command is invoked.
#
set clientlist=('awk '/^user [A-Za-z][A-Za-z0-9]* 0/ { print $2 }' /etc/nd.local')
foreach i ($clientlist)
    /etc/arp -d $i > /dev/null
end
```

Reference Number: 1003840

Synopsis: dnalogin doesn't handle the backspace character correctly

Release: sunlink4.0

Description:

When remotely logged in to a DEC VMS systems, dnalogin does not handle backspace characters, arrow keys, ^A and other control characters correctly. This is not a problem when using dnalogin to login to another Sun.

Reference Number: 1003841

Synopsis: dnalogind doesn't handle multiple control characters correctly

Release: sunlink4.0

Description:

dnalogind does not handle multiple occurrences of CTRL-C, CTRL-D, CTRL-Y, and CTRL- correctly. When remotely logged in to a Sun system from a VAX/VMS system using SET HOST, typing CTRL-C twice results in unexpected termination of the SET HOST session. Usually, no error message is given and the dnalogind process on the Sun is not terminated.

Reference Number: 1004426

Synopsis: Can't build DNA kernels on SunOS 3.3

Release: sunlink4.0

Description:

If you try to install SunLink DNA 4.0 on a SunOS 3.3 system, you will get a load error when you try to build a DNA kernel. The problem is that the routine atoi (_atoi) is multiply defined.

Reference Number: 1004429

Synopsis: dnalgin fails with segmentation violation

Release: 3.2

Description:

The bug occurs after using dnalgin to log in to VMS/VAX. When the VMS/VAX system is running MONITOR PROCESS/TOPCPU and a MESSAGE is sent to the window from the VAX (such as when VAXmail arrives or when a job that was submitted to a queue with the /NOTIFY switch completes), the following error message is printed on the window and the VMS login session is terminated:

Fatal Unix Error (Segmentation Violation)
CTERM exiting

This happens both in vt100tool and shelltool when logged in using dnalgin. It happens in neither vt100tool nor shelltool when logged in via TELNET.

Reference Number: 1004432

Synopsis: multiple passwords doesn't work

Release: sunlink4.0

Description:

If the VMS system turns off echo, and then reads multiple lines of input with prompts between them, the vt100 window overwrites the prompt each time, rather than using a second line.

Examples of this are seen when changing the password, or logging in when the VAX has the option for TWO system passwords to be typed. It 'appears' not to prompt for the second one, but in fact it does.

Reference Number: 1004475

Synopsis: writing 100,000+ bytes over /dev/dna will panic the system

Release: sunlink4.0

Description:

Writing 100,000+ bytes over a logical link causes the system to panic with the following message:

PANIC: CEX fatal DNA error

Work around:

Limit the maximum number of bytes done on each write to less than 32767 bytes. This a short word. vs. long word problem.

sna3270

Reference Number: 1003690

Synopsis: cannot start more than 4 sna3274 sessions
Release: sunlink4.0

Description:

No more than 4 sna3274 sessions can be started on the same sna gateway. When you try to start the 5th cluster controller process, you get the error message:

<time stamp> 3270 server: register with mapper failed

The configuration used is:

3.0 unix, 4.0 sna3270, 2 SCP boards

The original 4 sessions were started on scp rs232 ports, and the fifth one was attempted on an scp rs449 port.

The /etc/servers file contains:

```
rpc udp /usr/sunlink/sna3270/3270mapper 100013 2
```

Only 1 3270mapper is running (as shown by ps ax)

Work around:

Patch tape available from Technical Support

vt100tool

Reference Number: 1004435

Synopsis: bugs using DEC package wps (word processing) with vt100tool
Release: sunlink4.0

Description:

When using vt100tool and loading wps, a DEC word processing package for vt100's, wps fills in a menu, and then fills in information such as folder names in reverse video. At the end of this sequence the cursor should be near the bottom of the screen in preparation for user input. However, the cursor is left at the end of the reverse video text.

Another problem with using wps on the vt100tool is that the exit screen (PF1) appears to generate the correct sequence, but wps doesn't respond to it.

Diagnostics

Diagnostics

Reference Number: 1003171

Synopsis: Sun-3 systems with pre 1.6 proms can fail to reboot
Release: 3.2, 3.1, 3.0

Description:

Pre- Release 1.6 monitors depend on the pmeg, which maps the last part of physical memory during startup not to be changed. If pmeg is modified, when an attempt is made to reboot the system, the screen goes blank, everything hangs, and all LEDs are on. Normally the system does not run out of pmegs on a Sun-3, the problem doesn't occur very often. Thus, this is a MONITOR bug.

Work around:

Power cycle the system after it hangs during reboot.

Reference Number: 1003714

Synopsis: problems using port B as console with diag switch on
Release: prom1.8and2.3

Description:

On the CPU for the 3/75, 3/140, 3/160, 3/180, the system can hang when the console is on port B and the diagnostic switch is on. Port A seems to function properly.

Work around:

1. "x" will work if preceded by a "ub" monitor command.
2. By typing a character in the 10 sec time period it will invoke the extended test system.

Reference Number: 1003926

Synopsis: bootproms do not check the contents of the eeprom for errors
Release: prom2.0

Description:

On 3/260HM, if the EEPROM is set for low resolution (0x16 = 0x00) and monochrome display (0x1f = 0x00), after a k2 reset or a power cycle, the system comes up and displays bits skewed across the video monitor. The banner and boot messages are unreadable.

On 3/260C, if the EEPROM is set for high resolution (0x16 = 0x13) and color display (0x1f = 0x12), when a large text file (more than

1 screenful of text) is displayed using 'more', several lines more than a screenful are displayed, the first lines of the file being scrolled off the screen. If a large text file is edited using vi, lines disappear and reappear in the wrong places. Frequently, several blank lines will appear when there are none in the original file.

Work around:

Correct the contents of the EEPROM and power cycle.

Reference Number: 1004563

Synopsis: bootproms do not properly handle the checksum field of the eeprom

Release: proms

Description:

The bootproms appear to totally ignore the checksum field in the eeprom.

Work around:

Use the eeprom -c to fix the checksum.

Documentation

Documentation

Reference Number: 1000431

Synopsis: documentation errors about yellow pages
Release: 2.0

Description:

In the manual "Networking on the Sun Workstation", Chapter "Network Services", Section 2.3, the paragraph on yellow pages (YP) states that a YP server may be neither an ND server or an NFS server. This is not true; a YP server may also be an NFS server, an ND server, or both.

The same paragraph also states that "processes on master YP server machines don't use YP services at all, and aren't YP clients"; this is also false. If /etc/ypbind is running on the master server, it is using the YP and is a YP client. The default is to have /etc/ypbing running on the master server.

Section 3.2.4, "Changing your passwd" states that ypwhich tells you where the master server is. This is false; ypwhich(8) tells you who is your server at that moment, but this could be a slave server.

Reference Number: 1000500

Synopsis: The example when typed in as documented does not work
Release: 1.3

Description:

In the Programming Tools for the Sun Workstation, page 8, the following example appears:

```
1,$s/^[ ]*//
```

If the user is unfamiliar with ed, he or she will be unable to detect that a space is missing between the brackets.

Work around:

Change the documentation so that a space between the brackets is more evident.

Reference Number: 1003027

Synopsis: on(1C) should have the bugs section amended - ^Z (CTRL-Z)
hangs window

Release: 3.2

Description:

There is missing information in the bugs section of the UNIX command on(1C)--if on(1C) is running, entering a Control-Z hangs the window over NFS mounts.

Reference Number: 1000510

Synopsis: details of using cgpixwindd from f77 suncore missing.
Release: 2.0

Description:

SunCore manual does not adequately explain the FORTRAN interface to the vwsurf struct. In particular, when using cgpixwindd, the cmapsize element of the vwsurf struct must be set if it needs to be other than the default of 2.

The resulting application runs fine on raw color surfaces, but appears much like a black and white application when run in a window.

Additionally, the documentation does not show the f77 equivalents of the C vwsurf struct.

Reference Number: 1003381

Synopsis: order of arguments for FRAME_ARGS mis-documented
Release: 3.2

Description:

See the Sunview Programmer's Guide (page 51), Revision A of 15 October 1986. In the window_create() example, the two arguments following FRAME_ARGS are given as "argv, argc".

Work around:

These should be given as "argc, argv", as correctly shown on page 334 of the same manual.

Reference Number: 1000412

Synopsis: misleading info on restore in 2.0 Sys Admin manual, section 3.4.2

Release: 2.0

Description:

See Release 2.0 System Administration Manual, Chapter 3 - Disk and File Systems, Section 3.4.2 - Restoring An Entire File System, Step 4; and Section 3.4.3, Step 7.

This section does not indicate that 'restores' must be done with the same blocking factor as when 'dumped.' This is particularly important when making multi-tape dumps to 1/4-inch tape. The System Administration Manual indicates use of 126-blocking factor on dumps, but does not mention specifying the same blocking factor during restores. When restoring a multi-tape, 1/4-inch dump tape created with a 126-blocking factor, the following error message appears at the end of a tape:

```
partial block read: <num> should be <num>
```

The contents of this partial-block read is not copied onto disk.

Work around:

Add the appropriate info to the mentioned section, e.g.,

4) Change to the /mnt directory and restore the level zero tape.

For a 1/2-inch tape drive:

```
# cd /mnt
# /etc/restore rvf /dev/rmt0
```

And for 1/4-inch tape drives (substitute for rdrive one of the following - rar0 for archive tape controller; rst0 for SCSI tape controller):

```
# cd /mnt
# /etc/restore rvbf 126 /dev/rdrive
```

Continue to restore incremental tapes...

Reference Number: 1000420

Synopsis: ACUHAYES omitted from supported-device types for UUCP documentat

Release: 2.0

Description:

ACUHAYES is omitted from supported-device types for uucp in the manual System Administration for the Sun Workstation, "Tutorials" index tab, "uucp Implementation Description" chapter, Section 9.10, Device Types (page 18).

The table shown should have a line with:

ACUHAYES Hayes Smartmodem 1200

There should be an additional note indicating that Sun supports the Ven-Tel 1200 PLUS (EC1200-32) and EC1200-31 (when set for 'AT' command recognition) with the ACUHAYES device type. Note that some are AT-compatible and some are not.

Reference Number: 1000656

Synopsis: 'Setting Up A Gateway Machine' omits adding new /etc/host entry.
Release: 2.0, 3.0

Description:

See Release 3.0 System Administration manual (pages 106-107), Communication chapter. This section discusses setting up a gateway machine, but has omitted one important step: after adding the new hosts entry to /etc/hosts on the Yellow Pages master server and running 'make hosts', the gateway machine must also have the new host's entry included in its own /etc/hosts file. The reason for this is that the /etc/ifconfig command(s) are run from /etc/rc.boot before YP starts and requires this information.

Reference Number: 1003127

Synopsis: /usr/lib/aliases and YP mail.aliases uses not clearly documented
Release: 3.2

Description:

The documentation on the format and uses of the /usr/lib/aliases file is sketchy and not very informative (about 1 page in the sysadmin appendix D and aliases(5)). There is no information on how to effectively use the alias system of mail, and no discussion of the trade-offs between using local alias files and the yp global aliases mapped in mail.aliases.

This means that if the user is not already knowledgeable about unix/sendmail, they have absolutely no clue as to why these files exist or how to use them.

Reference Number: 1003286

Synopsis: missing comment in uucp.h for UUDIR define

Release: all

Description:

See the System Administration manual (page 316). A reference is made to UUDIR being a define in uucp.h. UUDIR is actually a CFLAG.

Work around:

For additional information on the format CFLAGS and UUDIR see src/sun/usr.bin/uucp/Makefile.

Reference Number: 1003362

Synopsis: errors in sample printcap section of adding hardware chapter

Release: 3.0

Description:

See Release 3.0 System Administration manual (pages 160-161). In the sample printcap entry on page 160, the presence of both the fs/fc values and the xs are counter-productive. xs#040 sets LLITOUT, which disables all output processing. This undoes what is attempted by the fs#06020 and fc#0300, which tries to set XTABS, CRMOD, and space parity, but is overridden by the LLITOUT feature. On page 161, the 'Clear flag bits' printcap capability should be named 'fc' and not 'fs'.

Work around:

Remove the 'xs#040' field from the sample printcap entry.

Reference Number: 1003444

Synopsis: 19 field L.sys line limit not documented

Release: 3.0

Description:

L.sys lines have a 19-field limit.

Reference Number: 1003555

Synopsis: updates for 'Adding A Modem...' to 3.x kernel configuration

Release: 3.0

Description:

See the System Administration manual (pages 151-152), Revision B of 17 February 1986, Chapter 5 - Adding Hardware To Your System, Section 5.4 - Adding A Modem To Your System.

The references to kernel configuration lines for the zs0 device are out of date. Specifically, the manual shows the following line:

device zs0 at mb0 csr 0xec800 flags 0x3 priority 2

Work around:

Use the current line from a Sun-3 3.x configuration file:

device zs0 at obio ? csr 0x20000 flags 3 priority 3

Reference Number: 1003917

Synopsis: Sys. Admin. manual doesn't mention 60 Mb tape

Release: 3.2

Description:

See the System Administration manual, "Backing Up File Systems with Dump," Section 3.3. There is no mention of 60Mb quarter-inch tapes, and the computation of dump's "tape length" parameter for quarter-inch tapes is not clear.

Reference Number: 1002987

Synopsis: gettimeofday(2) manual page unclear

Release: 3.2

Description:

See the UNIX Programmer's Manual, Section 2, gettimeofday. The description of timezone structure is unclear. This has been addressed in the article "Time Zones, Kernels, and You" that appears in the April, 1987 issue of the SOFTWARE TECHNICAL BULLETIN.

Reference Number: 1002995

Synopsis: login man page does not mention /etc/security

Release: 3.2

Description:

The man page describing /bin/login does not include the /etc/security file which, is used to restrict root logins to 'secure' ttys.

Work around:

The only method to find about security is to already know about it or look in source.

Reference Number: 1003106

Synopsis: f77(1) claims f77 leaves .o files by default

Release: 3.0, 3.2pilot

Description:

See Release 3.2 Commands Reference Manual (page 156), Section f77(1). The text reads as follows: "Filenames ending in .f are taken to be FORTRAN 77 source programs; they are compiled, and each object program is left in the file (in the current directory) whose name is that of the source with .o substituted for .f." Compiling actually does not produce a .o unless the -c option is used. The -c option is described later in the same document.

Reference Number: 1003134

Synopsis: send(2): man page should state what sockets SOF_OOB work on

Release: 3.2

Description:

The man page for send(2) does not state what socket types support OOB data. Attempting to send and receive OOB data on an AF_UNIX SOCK_STREAM causes the system to panic with an mfree error.

Work around:

Do not use OOB data on an AF_UNIX SOCK_STREAM.

Reference Number: 1003154

Synopsis: Errors in sh (1) manual entry

Release: 3.2

Description:

See the Commands Reference Manual (part number 800-1295-04), sh(1) description. In the "Comments" section on page 378, the '-' character should be replaced with the '#' character. In the "Parameter Substitution" section on pages 378-379, each occurrence of the '%' character should be replaced with the '\$' character.

Reference Number: 1003170

Synopsis: quotas fail unless quotas file is explicitly created

Release: 3.2

Description:

See the User's Manual for the Sun UNIX System, page 209, quota(1). When setting up quotas for a file system, the file named "quotas" must first exist at the file system root. This file must be

explicitly created; edquota(8) does not make this file.

Work around:

Enter the following as root at the root of the appropriate file system:

```
# touch quotas
```

Reference Number: 1003257

Synopsis: ascii(7) man page says chart is decimal but is octal

Release: 3.2

Description:

See Release 3.2 man page, ascii(7). The heading for the first conversion table is titled "Decimal - Character", but the information is actually octal.

Reference Number: 1003432

Synopsis: csh_builtins.1 man page won't print as expected

Release: 3.2

Description:

If /usr/man/cat1/endsw.1 does not exist, and "man endsw" is executed from any directory other than /usr/man, "man endsw" does not work. "man" treats manual pages which begin with ".so" specially; manual pages with embedded ".so" don't work unless an absolute pathname is specified.

Reference Number: 1003460

Synopsis: telnetd(8C) incorrectly reports 16-pseudo-tty limit.

Release: 3.2

Description:

The 3.2 telnetd(8C) man page states the following under the BUGS heading:

"telnetd can only support 16 pseudo terminals"

This restriction applies only to the pre-3.2 releases. The 3.2 version of in.telnetd has been modified, making it capable of handling up to 64 pseudo-ttys.

Reference Number: 1003686

Synopsis: Error on creat(2) manual page.

Release: 3.2

Description:

See the creat(2) man page. The first sentence in the description beginning with "This interface is made obsolete by" is incomplete.

Work around:

The entire sentence should read "This interface is made obsolete by the open(2) system call."

Reference Number: 1003721

Synopsis: Manual page error for pwck, grpck

Release: 3.2

Description:

See the man pages for pwck(8) and grpck(8). The text states these utilities are located in /etc, but these utilities are actually located in /usr/etc.

Reference Number: 1004242

Synopsis: kadb cannot be used on diskless machines

Release: 3.2

Description:

See man page kadb(8S). kadb cannot be used on diskless machines to get to the boot prompt "kadb>".

Work around:

Enter the following:

```
> b kadb -d
```

After the messages appear, the following is returned:

kadb:

Enter the following, then press <CR>:

```
le(,,1)vmunix
```

Graphics



Graphics
cgi

Reference Number: 1002597

Synopsis: cgi: cgipw does not respect pixwin regions

Release: 3.0

Description:

CGIPW does not respect pixwin regions.

The size (rect) of the pixwin is determined by calling win_getsize() on the pixwin window fd, rather than using pw_getregionrect(), or using any size info actually in the pixwin struct itself.

The SunView canvas window deals with region pixwins.

The pixwin handle which is made available is usually a pixwin region of the full pixwin of the canvas window.

Since scrollbars are implemented as pixwin regions, it is mandatory that these region areas be preserved.

This mismatch between CGIPW and SunView canvas use of pixwin regions prevents the integration of CGIPW on a SunView canvas which has scrollbars.

Reference Number: 1002598

Synopsis: cgipw: retained pixrect must be same size as screen pixrect

Release: 3.0, 3.2pilot

But a SunView canvas may have a backing (retained) pixrect larger than the visible screen window area. This allows scrolling around a large image with a smaller window.

This mismatch prevents the use of CGIPW on a SunView canvas which has a retained area larger than the visible window (and may have scrollbars).

Reference Number: 1002679

Synopsis: Re: Color map is not reloaded when entered from other screen

Release: 3.0

Description:

Color map is not reloaded when entered from other screen.

Work around:

Popping up a menu (anywhere) and bringing it down without invoking anything will reload the right colormap.

Reference Number: 1002935

Synopsis: CGI rectangle perimeters misplaced

Release: 3.2

Description:

A CGI rectangle may be filled (solid, patterned, etc.), and/or the perimeter drawn. If the perimeter is drawn, CGI draws it in the wrong place on the screen.

The bug occurs in GP/CG2 or BW2, using PIXWINDD. The bug appears whenever a window offset is nonzero in X or Y. This doesn't happen in CGIPW mode using user-documented CGI routines. It may not happen on "raw" devices.

Work around:

Customer support has patch.

Reference Number: 1002999

Synopsis: cgi: arcs are sometimes drawn rotated about endpoints

Release: 3.0

Description:

Arcs are sometimes drawn rotated about the arc endpoints. Thus, an arc having endpoints with the same y value that should be drawn so that it curves up, is drawn so that it curves down.

If the amount of physical screen space is large enough, the program will seg fault in `pr_curve()`. This usually works if the window is fullscreen, or on the raw device.

Reference Number: 1003262Synopsis: cgi: cannot create new view surface tool using `Cvwsurf.flags`

Release: 3.2

Description:

If the flags field of the `Cvwsurf` structure is set to `VWSURF_NEWFLG`, this should bring up a new view surface tool in which to display instead of taking over the `WINDOW_GFX` window.

In release 3.2, this flag appears to be ignored, so it does not appear to be possible to start CGI on a new view surface tool.

However, what actually happens is that CGI comes up in the `WINDOW_GFX` window and no view surface tool appears.

Work around:

If the "screenname" field of the `Cvwsurf` struct is made

"/dev/fb", the new viewsurface tool will be created correctly.

Reference Number: 1003392

Synopsis: Input code is careless about calling free on malloc memory
Release: 3.2

Description:

CGI input code has instances where it frees memory, while leaving around pointers that will later be accessed which point to the freed data.

Reference Number: 1003455

Synopsis: cgipw_set_vdc_extent fails if using more than one view surface
Release: 3.2

Description:

Cgipw_set_vdc_extent (a new SunCGI extension in 3.2) will only work correctly if just one view surface is in use, because it doesn't set the global _cgi_output_att pointer that determines which scaling parameters are used by the _cgi_devscale function. Since _cgi_devscale is used by _cgi_windowset, which is called by cgipw_set_vdc_extent to set scaling, it will use the current _cgi_output_att, which will have been left set correctly by open_cgi_pw when the single view surface in use was opened.

Work around:

Call some other cgipw_ function that takes a descriptor as an argument and has no undesirable side effects (cgipw_inquire_text_attributes is a good choice) with the descriptor of the desired view surface, then call cgipw_set_vdc_extent with that same descriptor. The global value _cgi_output_att will have been left set by the cgipw_inquire_text_attributes call, and will be used correctly.

Reference Number: 1003572

Synopsis: Bad inquire_cell_array and inquire_pixel_array name argument
Release: 3.2

Description:

Inquire_cell_array and inquire_pixel_array have an argument called 'name' that specifies which view surface to use. The client program is supposed to pass in the value it got back from open_vws or open_cgi_pw, and this serves as an opaque handle for the view surface. In all other functions that take

a 'name' argument, it is treated as an index into the view surface table, and is zero-based. In the two functions mentioned here, 'name' is presumed to be 1-based, and 1 is subtracted from it before it is passed to `_cgi_context`, making these functions always return an error, or use the wrong view surface.

Work around:

Call these two functions as
`inquire_cell_array(name + 1, ...);`
`inquire_pixel_array(name + 1, ...);`

demo

Reference Number: 1002634

Synopsis: demos: maze core dumps on high resolution b/w monitor for 3/260, 3/280

Release: 3.2pilot

Description:

The demo `/usr/demo/maze` core dumps with a segmentation fault when run outside windows on the 3/260, 3/280 high resolutions b/w monitor.

Work around:

Double size of global arrays in src code.

gp

Reference Number: 1004407

Synopsis: VIEWPORT: `Create_GP()` uses `GPDATA *gpb` without allocating memory first

Release: 3.2

Description:

The GP/VIEWPORT function `Create_GP()` does not correctly allocate memory for a `GPDATA` structure pointer before the structure is referenced.

On line 132 of `/usr/demo/GP1/VIEWPORT/gpbuf.c` the following pointer is declared:

```
FAST GPDATA *gpb; /* -> GP buffer structure */
```

This pointer is first dereferenced on line 139 and many successive lines. Actual memory for the `GPDATA` structure is never allocated in this routine. The pointer is local and hence is not globally initialized.

Work around:

Programmer can allocate his own storage for the pointer with `malloc(3)`.

pixrect

Reference Number: 1003538

Synopsis: pf_open(): fails on rotated vfonts (those which end in 'r')
Release: 3.0, 3.2

Description:

In /usr/lib/vfont each vfont comes in two variants; times.b.24 and times.b.24r. The 'r' file is a rotated version of the font.

pf_open(l) will open the non-rotated file, but fails on the rotated file.

Reference Number: 1003749

Synopsis: GP functions do not check source pixrect types
Release: 3.2

Description:

The functions which support the GP polygon and replrop commands do not check the type of the source pixrect passed to them. When passed a slightly unusual pixrect (such as a region), the results are indeterminate.

Reference Number: 1003757

Synopsis: RT_BYTE_ENCODED rasterfile operations are unreliable
Release: all

Description:

The code used to encode and decode RT_BYTE_ENCODED rasterfiles is unreliable. The encoding process destroys the input pixrect image and can fail. The decoding process can also fail for perfectly valid rasterfiles, without necessarily giving an error indication.

Work around:

Use RT_STANDARD rasterfiles.

SunCORE

Reference Number: 1000895

Synopsis: transformation of text doesn't clip
Release: 1.1

Description:

When doing a transformation of a segment which contains some text, the text comes onto the screen although it should have been clipped out of the picture.

Reference Number: 1000902

Synopsis: fat vectors vary with slope (SunCORE)

Release: 1.4, 2.0, 2.1beta

Description:

'1.4 Release Manual' and 'Release 2.0 System Summary' report that "The actual width of fat vectors (lines with `line_width > 0`) are now the same independent of the displayed slope of the line" as a SunCORE bug fix. This does not seem to be the case for most view surfaces.

A quick spot check shows:

View Surface	Model	Release	Results
bw1dd	100U 2.0		widths vary
pixwindd	100U 2.0		widths vary
bw2dd	170 1.4		widths vary
cg2dd	160 2.1beta		widths same
cgpixwindd	160 2.1beta		widths vary

Work around:

The SunCORE programmer can simulate fat vectors with multiple single-pixel-wide vectors placed side by side.

Reference Number: 1000905

Synopsis: SunCORE: text does not transform correctly

Release: 2.0

Description:

In SunCORE text written to a segment which is to be transformed does not properly clip to the window boundaries, even with both window and output clipping enabled.

Reference Number: 1000917

Synopsis: segment containing text is not clipped properly when scaled

Release: 3.2pilot, 3.0

Description:

In SunCORE when scaling a segment containing text with the routine `set_segment_image_transformation_2()`, the graphics (lines) seem to clip properly, but the text appears to wrap at some point.

Reference Number: 1002872

Synopsis: SunCORE: fat lines not completely removed when run on raw gpone0a
Release: 3.2

Description:

A program designed to draw two fat lines which cross, then removes the lines by deleting the segment, does not run correctly when run on the raw gpone0a view surface (outside windows). When run on the raw gp view surface, the endpoints of the lines are not completely erased. The endpoints really are circles or arcs.

Reference Number: 1003703

Synopsis: SunCORE: only allows 20 fds
Release: 3.2

Description:

SunCORE does not read input if the file descriptor of the vwsurf.windowfd field is ≥ 20 .

Work around:

Use a fd < 20 .

Reference Number: 1004067

Synopsis: SunCORE: GP ucode breaks in 3.2, worked in 3.0
Release: 3.2

Description:

Using the 3.2 Graphics Processor microcode with SunCORE frequently fails. Window boundaries are not preserved and bands of color are drawn both inside and outside the window.

Work around:

Turn output clipping off in the program. When using the GP the clipping is not much overhead anyway.

Reference Number: 1004150

Synopsis: incurrpos2 fails for SunCORE called from Pascal
Release: 3.2

Description:

In SunCORE called from Pascal, incurrpos2 fails and causes the application to core dump with a memory fault. However, calls to incurrpos3, passing in a dummy variable as the third parameter.

Work around:

Always use `incurrpos3`.
* or * give the use the correct Pascal wrapper.

Reference Number: 1004254

Synopsis: `await_any_button_get_locator_2()` returns incorrect location.

Release: 3.2

Description:

`await_any_button_get_locator_2()` sometimes returns an incorrect location. This usually occurs directly after the mouse is moved into the viewport and a button is pressed.

Work around:

Move the mouse around in the viewport for awhile before pressing any buttons.

Kernel

Kernel

Reference Number: 1001028

Synopsis: system runs out of I/O buffers if kernel sends too many error messages
Release: 2.0

Description:

When running page mode on a console window, if the kernel sends many error messages to the console, the system runs out of I/O buffers and hangs.

Reference Number: 1004153

Synopsis: 3.3 is causing bus error panics when accessing via nfs
Release: 3.3

Description:

Sun OS 3.3 produces a bus error when accessing a file/program via NFS. This problem occurs when starting the Sunlink Internetwork Router on a cpu port. When starting up the remote end of the link then the local end of the link, a panic occurs on the local system.

Reference Number: 1001124

Synopsis: After remote /etc/shutdown, console is still in "raw" mode.
Release: 3.0, 2.0

Work around:

The console terminal is still working, but it is in raw mode so you can type:

```
# stty echo -raw<lf>
#
```

Note that you won't see this stuff displayed, but you will get another prompt.

Reference Number: 1001149

Synopsis: Sun3/160C with 3.0FCS halts for no apparent reason
Release: 3.0

Description:

When running generic Sun 3/160C, 4MB, SCSI disk and tape with several NFS file systems mounted, the system completely locks when the

following is run:

```
tar tvbf 126 /dev/rst0
```

Attempts to interrupt tar fail, the tape doesn't move, and ping from a remote system succeeds, but rlogin times out.

Reference Number: 1001154

Synopsis: SIGIO doesn't work well with pipes

Release: 3.2beta

Description:

In a two-process program using SIGIO that is connected by a pipe (where the first process sets up a SIGIO handler that will read stdin when a string appears on it, and the second writes a string on stdout every five seconds), when the second is piped into the first, the first process doesn't print any messages.

Reference Number: 1001168

Synopsis: Degenerate filename problems in lookuappn():sys/vfs_lookup.c

Release: 3.2pilot

Description:

In Release 3.2Pilot, if an attempt is made to write to an existing directory with a degenerate filename (such as "." and "/"), the system won't allow the write, but it returns an incorrect error code -- EINVAL instead of EISDIR. In Release 3.0FCS, the system may return EPERM as the error code.

Reference Number: 1002485

Synopsis: Clocktool leaves pseudo-tty in an unusable state

Release: 1.1, 3.2

Description:

Clocktool leaves the pseudo-tty set to a state in which other terminals cannot set it to their environment type. The window programs that use pseudo-ttys need to either close them or lock them somehow so that they cannot be accessed by other programs using pseudo-ttys (inetd).

Work around:

An undocumented stty function in 3.2 can be used to reset rows and columns:

```
stty rows 0 cols 0
```

Reference Number: 1002579

Synopsis: kernel strlen() crashes system if passed null pointer
Release: 3.0

Description:

If the kernel version of strlen() is passed a null pointer, the system crashes.

Reference Number: 1002687

Synopsis: fragmented swap partition
Release: 3.2pilot

Description:

When running suntools under 3.2 pilot, the swap partition gets increasingly fragmented until programs stop running. Suntools cannot be run for longer than 3 days.

Work around:

Short term: Exit suntools and restart it.
Long term: Increase size of swap partition.

Reference Number: 1002831

Synopsis: TCP/IP Problems with round trip time computation
Release: 3.0

Description:

If several transmissions are made of a given segment of code before an ACK arrives, then the TCP computes the round trip time between the LAST transmission and the ACK, indicating a problem with the round trip timing code. This also occurs when the ACK was in response to an earlier transmission.

Reference Number: 1002833

Synopsis: TCP/IP lacks Nagle tinygram-avoidance algorithm
Release: 3.0

Description:

The Sun TCP lacks the Nagle tinygram-avoidance algorithm. This rule, described in RFC-896, specifies that TCP should delay sending new data unless there is already a maximum-sized packet "in the pipe". This has the effect of combining lots of small (i.e., single character) writes into fewer but larger packets. More than one packet is unacknowledged only when the throughput requirements justify it.

Reference Number: 1002976

Synopsis: Socket application causes system to panic.

Release: 3.2, 3.0

Description:

Some Unix domain socket applications cause the system to panic.

Work around:

If possible, convert the affected applications to use Internet domain sockets in place of UNIX domain sockets. There should be no problem doing so unless the applications use the access rights passing feature of the UNIX domain to pass open file descriptors from one process to another.

Reference Number: 1003149

Synopsis: newly-installed system hangs with 'no space' message

Release: 3.2

Description:

The error is related to 3.2 installation. When using default setup parameters, a stream of the error message "no space" occurs after setup during boot of the system. The hardware configuration is:

3/160s with 8MB RAM
380MB drive on Xylogics 450
1/4" tape.

A similar hardware configuration can also cause this problem.

The disk is configured as follows:

A - 19.07	E - FREE
B - 16.62	F - 20.21
C - 131.17 (4 clients - root=8MB & swap=24)	G - FREE
D - 138.880	H - 51.21

Work around:

Change partitions, or reinstall, changing the disk configuration and/or client configuration. (Note that this may be a trial-and-error procedure.)

Reference Number: 1003357

Synopsis: panic ifree, 2 drives on one Xylogics 450/451

Release: 3.2, 3.0

Description:

Sometimes clients served by machines that have 2 disk drives on a single Xylogics 450 or 451 controller experience a "panic ifree" when a block of zeros is returned by the server instead of a block of

valid inodes.

Work around:

Use only one disk drive per controller

Reference Number: 1003701

Synopsis: cannot start suntools on monitor if tty is console

Release: 3.2

Description:

If a system has been configured so that tty{a,b} is console, the frame buffer, keyboard, and mouse are inactivated and are not usable by applications such as suntools.

Work around:

With a system configured with a serial terminal as the console, first do the following as root:

```
# cd /dev
# /etc/mknod ttykbd c 12 2 ; chmod 666 ttykbd
# /etc/mknod ttymouse c 12 3 ; chmod 666 ttymouse
```

then start suntools :

```
# suntools -d /dev/bwtwo0 -k /dev/ttykbd -m /dev/ttymouse &
#
```

Reference Number: 1001256

Synopsis: putting /dev/zsmouse in async mode kills window system

Release: 3.0

Description:

The following code sequence causes a double panic: sleep when executed in a window:

```
fd = open("/dev/zsmouse",0);
fcntl(fd,F_SETOWN,getpid());
fcntl(fd,F_SETFL,FASYNC);
```

where /dev/zsmouse is character device major 12, minor 3. The same result occurs with /dev/mouse.

Reference Number: 1003135

Synopsis: "panic: mfree" with AF_UNIX SOCK_STREAM OOB data
Release: 3.2

Description

AF_UNIX SOCK_STREAM OOB data is not a supported feature of SunOS.

Work around:

Use OOB (out of band) data only with Internet domain sockets.

Reference Number: 1001271

Synopsis: ptrace interaction with interrupting slow system calls
Release: all

Description:

If a slow system call such as select or read from a terminal is interrupted while a program is under the control of a debugger, then the debugger is unable to call a function in the program being debugged.

When the slow system call is interrupted, the kernel does a setjmp to remember where it was. To call a function in the program being debugged, dbx writes a jsr instruction in the program's address space and with the ptrace option (SINGLE_STEP,) executes the jsr. Instead of executing the jsr, the kernel does a longjmp back into the interrupted system call and waits for it to complete.

Reference Number: 1002665

Synopsis: killing and restarting socket listener causes sender to hang
Release: 3.0

Description:

In 3.0 when UNIX domain sockets are used to communicate between processes, if the listening process is killed and then is restarted, the talking process hangs.

Work around:

Use Internet domain sockets.

Reference Number: 1004002

Synopsis: *crfreelist in kern_prot.c gets trashed.

Release: 3.2

Description:

When doing extensive ethernet/disk activity (time of occurrence ranges from 2 to 12 hours) the system may trap on a bus error condition.

Reference Number: 1001037

Synopsis: SCSI tape drive hangs

Release: 3.0pilot

Description:

After inserting a tape and entering the following command, the command doesn't return and the tape drive light does not come on.

```
fridge% mt -f /dev/rst0 rew
```

The SCSI disk cannot be accessed, so commands accessing partitions on this SCSI disk hang and cannot be suspended or aborted. (This has no effect on system root and /usr located on a Xylogics disk, so the system can still function.)

```
'ps ax' shows
DW  mt -f /dev/rst0 rew
D   ls -l /usr/fridge
D   df
```

When windows are quit, ps still reports the csh and the command as running in ps.

Network

Network
Library

Reference Number: 1002879

Synopsis: initgroups(3)/getgrent(3) causes malloc'd memory to be overwritten

Release: 3.2

Description:

If initgroups(3) is called two times, the second call results in the following error message from free, indicating that malloc'd buffers are overwritten:

free: bad block size (1919118906) at 0x27850

Examination of the core dump shows the offending call to free occurs in getgrent(3), which is called from initgroups.

The contents of the malloc'd memory are strings from the groups file.

This bug is reproduced when the test program is compiled with the debugging malloc module, /usr/lib/debug/malloc.o.

nfs

Reference Number: 1001294

Synopsis: nfs: root access across net does not check group access correctly

Release: 3.2pilot, 3.1, 3.0, 2.2

Description:

nfs does not correctly check group access for root of the nfs client if the group is NOT wheel.

If an nfs mounted file system has a directory with the following conditions, it is writable by root on the nfs client (i.e. writable by user nobody):

1. only has owner and group access permissions (i.e. mode 770)
2. owner is root
3. group is NOT wheel

If the group of this same directory is changed back to group wheel, root on the nfs client no longer has write permissions (as it should be).

Reference Number: 1001992

Synopsis: Can't use chgrp on an nfs mounted file system

Release: 2.0

Description:

It is not possible to use "chgrp" on a file in your home directory when logged onto a client machine which is nfs mounted. The error message received in this circumstance is:

filename not owner

If you rlogin to the server and repeat this command, it will work fine. This is due to chgrp being setuid root.

Reference Number: 1003161

Synopsis: nfs client caching has protection problems

Release: 3.2

Description:

Apparently, there is client side caching going on that latches [bad] permissions for files accessed over the nfs. If I have a file, eg., my mbox, that is mode 600, and I try to first read it as root, the access fails. However, if I then turn around and try and access it as myself, it fails as well. Likewise, if I access a file as myself, then root can see it too, until I try and remove it as root, then no one can see it.

Work around:

flush the cache to clear the condition

<hal> find . -name lambda -print

Reference Number: 1003673

Synopsis: rpc.mountd thrashes with large export list

Release: 3.2

Description:

If a server has a large list of machines to which a file system is allowed to be exported, the mount daemon thrashes while parsing /etc/exports. Apparently, rpc.mountd is trying to get the network address of each machine in the exports list for each request. If there are a large number of requests (say after a power failure) it thrashes.

Work around:

Delete the machine export list. This removes protection, but allows the daemon to make progress.

Reference Number: 1004365

Synopsis: NFS/disk quotas

Release: 3.2

Description:

If one implements quota in a server-client environment, the client is not warned when he goes over quota on his first write, only on later writes.

Reference Number: 1004496

Synopsis: mount(8) option intr doesn't allow keyboard interrupts

Release: 3.2

Description:

The intr option to mount(8) doesn't allow keyboard interrupts to kill a process that is hung waiting for a response on a hard mounted filesystem.

Program

Reference Number: 1001371

Synopsis: yppasswd responds with "couldn't change passwd"

Release: 3.3, 3.2, 3.0, 3.0pilot

Description:

Using yppasswd to change the password in the yp database fails when the ascii file is not /etc/passwd, although /usr/etc/rpc.yppasswd is set up correctly. If you use /etc/passwd as the ascii file, it succeeds.

Reference Number: 1001379

Synopsis: Rlogin and username length

Release: 3.0

Description:

There seems to be several different ideas of the maximum username length incorporated in related utilities such as "rlogin" (or "rlogind"), "su", "login", etc. It appears that rlogin/rlogind's idea is incorrect, although it could be one of the other utilities that is wrong. In any case, they should all be using the same parameters for maximum username length.

Reference Number: 1003377

Synopsis: ypbind fails when no server on subnet zero

Release: 3.3beta

Description:

In 3.3 Programs still broadcast by sending to "subnet zero". There is a special test in the kernel to convert this into a broadcast if there is no route to subnet zero, but there was a bug in routed that causes subnet zero routes to be propagated even when they should not.

Work around:

Run `"/usr/etc/yp/ypset localhost"`

Reference Number: 1003509

Synopsis: in.routed crashes on invalid /etc/gateways line

Release: 3.3beta

Description:

An invalid host or network name in the /etc/gateways file crashes /etc/in.routed - older versions ignore these lines.

Work around:

Only put valid host and network names in /etc/gateways

Protocol

Reference Number: 1003156

Synopsis: telnet from a Vax to the Sun fails

Release: 3.2

Description:

Telnetting from a Vax(4.4 VMS) to a Sun running 3.2 will fail but telnetting from the Sun to Vax will succeed. According to the customer:

1. login prompt is displayed
2. he specifies his login name and hits <CR>
3. the first <CR> is not interpreted consequently he hits <CR> for the second time.
4. the second <CR> is acknowledged as the passwd entry and the program exits with an invalid passwd entry message.

Work around:

Use 3.0 /usr/etc/in.telnetd

Reference Number: 1004409

Synopsis: telneting to a remote machine called "x" will fail
Release: 3.2

Description:

If a machine's hostname is specified as "x", then an attempt is made to telnet to that machine, telnet fails and responds with the following error message:

```
% telnet x
Trying 0.0.0.0 ...
telnet: connect: Can't assign requested address
```

This happens because the Sun's internal routine to get the internet address takes a leading x to mean the address is given in hex, so "x" is a valid IP number of zero.

Yellow Pages

Reference Number: 1002940

Synopsis: yppasswd fails on lexically similar logins
Release: 3.0, 3.2

Description:

Given a situation where two users have identical logins except that one login is longer than the other, if the longer login is above the shorter in the yp password file, the shorter one is not found by yppasswd, and thus, the yellow pages password cannot be changed.

Work around:

Put the shorter login ahead of the longer one in the password file.

Shell



Shell

Bourne Shell

Reference Number: 1001427

Synopsis: exec in bourne shell gives "no stack space"

Release: 3.2pilot, 3.0

Description:

If you exec a process that doesn't exist, then exec one that does, the following messages appear:

no space
no stack space

When you get out of the process, an error message appears such as one of the following:

no memory
sorry, pid was killed due to swap problems in swapout:
no swap space for U area
pid killed due to swap problems in xalloc: no swap for text

C Shell

Reference Number: 1002770

Synopsis: csh dumps core if history reference in backquotes

Release: 3.2

Description:

The C shell dumps the core for history references enclosed in backquotes. For example:

% `!\$`

or

% echo `!*`

Reference Number: 1004091

Synopsis: csh ~login expansion doesn't always work correctly

Release: 3.2

Description:

csh ~login-name expansion does not always work correctly, and sometimes return a null. The problem appears most often within the following scenarios:

Run csh with 'filec' set
user must be in the YP passwd database
user cannot be in the local /etc/passwd file
do something like 'ls ~user<ESC>', then try 'ls ~user' again

Work around:

Issue the following sequence of commands:

```
unset filec
echo ~<user> (replace <user> with the relevant login name)
set filec
```

Reference Number: 1004261

Synopsis: kill command bug "IOT trap (core dumped)"

Release: 3.2

Description:

Nested command substitutions attempted using alias cause a core dump, as in the following example:

```
alias psn 'set kj='psf\!*'
echo $kj[1]
unset kj'
alias psk 'kill 'psn ^!*''
```

When run, the code attempts to evaluate the nested substitutions, notices that one of its invariants has been violated, and aborts, producing the following message:
IOT trap (core dumped)

Reference Number: 1004318

Synopsis: command line overflow in backquotes hangs shell

Release: 3.2

Description:

When using a backquote expansion in a command line within the C shell, any backquoted command that overflows the command buffer hangs the shell.

Work around:

Avoid using command substitutions that are likely to produce voluminous output.

Sunview



Sunview

Reference Number: 1002216

Synopsis: type bool inconsistently defined in system .h files

Release: 1.2

Description:

The definitions of bool, TRUE, and FALSE in
/usr/include/sunwindow/rect.h and
/usr/include/curses.h are inconsistent.

More importantly, bool is defined as a char
for curses, and as an unsigned for the window system.

Any program attempting to do ascii and bitmap
displays will have problems with this.

Reference Number: 1002218

Synopsis: Menus of certain height get "menu_show: Menu too large for screen"

Release: 3.0

Description:

When using walking menus under 3.0 and up, if you have a menu
that is exactly one item longer than can fit in a single
column on the screen, you get the error message:
menu_show: Menu too large for screen.
However, longer and shorter menus work fine.

Reference Number: 1003615

Synopsis: scrollbars won't work with pixwin regions

Release: 3.2

Description:

Scrollbars do not work with pixwin regions.
When the user draws a line in a region of a canvas that
has a scrollbar, scrolls a bit, and draws a line in the region
at the same co-ordinates, a line is drawn in the co-ordinates
of the displayed pixwin. After scrolling some more the
incorrectly drawn line will disappear.

Reference Number: 1002852

Synopsis: textsw glyph off end of file causes crash

Release: 3.2

Description:

Painting a textsw glyph off the end of a file causes a core dump.

Work around:

Use dbx instead of dbxtool or change the use path.

Reference Number: 1003168

Synopsis: pw_putcolormap() doesn't immediately update the colormap if window is 256 or larger

Release: 3.2

Description:

When using a colormap of size 256, the routine pw_putcolormap() does not take effect until the mouse is moved out and back into the window. A colormap of size less than 256 seems to work as expected.

Work around:

At the time when pw_putcolormap() is called, use the routines win_grabio() and win_releaseio() which seem to reset the colormap.

Reference Number: 1003720

Synopsis: pw_putattributes() does not set retained memory pixrect attributes

Release: 3.2

Description:

This is a memory pixrect bug. The pixwin function pw_putattributes() does not set the attributes of the retained memory pixrect (if present). This effectively prohibits the use of attributes on a retained canvas (including double buffering).

Reference Number: 1003864

Synopsis: crosshair cursor doesn't work if CANVAS_FAST_MONO is used

Release: 3.2

Description:

Crosshair cursors don't work in a "CANVAS_FAST_MONO" canvas on a desktop on a cg4 frame buffer. The crosshair cursor is not erased properly, and many repetitions of the following set of error messages appear on the console:

Kernel cursor Roperr 3

Kernel cursor Roperr 4

Work around:

Don't use crosshair cursors, don't use the `CANVAS_FAST_MONO` attribute, or start the desktop using the `-8bit_color_only` or `-overlay_only` option.

Reference Number: 1003871

Synopsis: `TEXTSW_INSERTION_POINT` doesn't affect caret until mouse cursor is moved into window

Release: 3.2

Description:

When setting the `TEXTSW_INSERTION_POINT` attribute, the `textsw` caret is not adjusted until the mouse cursor is moved out and back into the `textsw`.

Reference Number: 1003877

Synopsis: SunView problem reading from standard input in `dbx/scripts`

Release: 3.0, 3.2

Description:

When attempting to read from the standard input in SunView code which is being run under `dbx` or from a shell script, the signal `TTIN` is generated and `tty` input turned off. In the case of a shell script, there is an additional effect of the program hanging until it is manually killed.

Reference Number: 1003936

Synopsis: `textedit`'s "find shelf forward" fails occasionally

Release: 3.2

Description:

The "Find Shelf, Forward" directive available from `textedit`'s default menu occasionally fails to find the correct text; instead, the cursor is positioned elsewhere.

Reference Number: 1004138

Synopsis: sunview: popup panels w/ scrollbars don't work properly

Release: 3.2

Description:

A popup frame displayed via `window_loop()` having a panel containing a scrollbar does not work properly in Sun OS Release 3.2.

The scrollbar appears, but clicking in the scrollbar region does not scroll the panel as it should. The cursor does not change, possibly indicating that the scrollbar is not getting any input events at all. This worked fine in Sun OS Release 3.0.

Reference Number: 1001996

Synopsis: curses/sunwindows bug (writes not updated properly)

Release: 2.0, 3.0pilot

Description:

When `curses` writes to a highlighted field running in a tty subwindow, the highlighted field is occasionally not updated properly, but works fine if running outside SunWindows or through an `rlogin`. `/usr/games/canfield` exhibits a similar problem: When toggling card counting and playing two or more

games in a row, black cards are eventually incorrectly highlighted in the foundation and the card count.

Reference Number: 1002387

Synopsis: cd in mailtool -- shell character expansion

Release: 3.0beta

Description:

The cd option in mailtool will accept a shell meta character, but if it fails, it doesn't give an error message as the regular shell does:

e.g. mabstoa\$ cd /usr/vfree/lsk/qa/tsting/3.0/unb*
/usr/vfree/lsk/qa/tsting/3.0/unb*: No match.

Reference Number: 1003850

Synopsis: Message "Too large a window number (128)!" with two fb's and suntool

Release: 3.2

Description:

When suntools is run on two framebuffer on the same system, each time a tool is started, the following message is printed on the console:

"Too large a window number (128)!"

The tool comes up and appears to work correctly.

This message appears for each window created; for example, a shelltool causes two messages to be printed--one for the frame, and one for the tty window. These messages continue after the second suntools is exited, and until the first suntools is exited.

Reference Number: 1002084

Synopsis: screendump doesn't work if anything moves

Release: 3.2, 3.0

Description:

On a color Sun, if the screen is updated (eg. clocktool) during a screendump, the resulting raster file is garbled.

Work around :

There are two possible workarounds:

1) turn off any updating of the screen before the dump (switch off

the second hand on the clock, kill any perfmeters, use defaultsedit to switch off the blinking text caret, etc)

2) Write your own screen dump using the following psuedocode:

```
fullscreen_init()
pr_load() /* from screen */
fullscreen_destroy()
pr_dump() /* to standard output */
```

Reference Number: 1002466

Synopsis: textedit can't save files to read-only directory

Release: 3.0

Description:

If you are editing a file for which you have write permission, but you don't have write permissions in the directory, the "store" or "save" fails because it can't write the backup file.

Reference Number: 1002523

Synopsis: textedit incorrectly sizes windows with the "-Ww" flag

Release: 3.0

Description:

If textedit (or possibly any tool that uses scroll bars) is given a width in characters (-Ww), the tool as a whole gets sized to the specified character width, but the scroll bars use up some of that space, resulting in a width smaller than intended. For example, an 80-column edit window must include the scroll bar width in its calculation each time the font or scrollbar width is changed to produce the desired edit window width.

Reference Number: 1003138

Synopsis: csh filename completion inoperative in csh cmdtool

Release: 3.2

Description:

The ESC mechanism of csh, which provides filename completion, does not work with cmdtool in Release 3.2

System Administration

System Administration

Reference Number: 1003166

Synopsis: tapeless server installations occasionally fail in 3.2
Release: 3.2

Description:

During installation, the server crashes with a "dup ialloc" panic after installing the first client (3/75) when attempting to install the following configuration:

3/280 server, xylogics 451 controller, fujitsu disk
3 clients: 3/75, 3/140 and 2/50
3/110 tape server

However, when only one client was specified, no problems were seen. This system has been previously installed as a tapeless server running 3.2 with 2 dummy clients.

All clients were halted during the installation.

Reference Number: 1004136

Synopsis: 3.3UPGRADE does not work on systems running 3.2EXPORT
Release: 3.3

Description:

The 3.3UPGRADE script terminates on systems running 3.2EXPORT. The 3.2 export distribution identifies itself as 3.2EXPORT, but the 3.3UPGRADE script only accepts '3.2', '3.3BETA', or '3.3' as legal releases in which to install 3.3 on.

Here are the relevant lines from 3.3UPGRADE:

```
248 #
249 # Determine current release
250 #
251 set 'grep "UNIX" /etc/motd' >/dev/null
252 RELEASE=$5
253 if [ "$RELEASE" != "3.2" -a "$RELEASE" != "3.3BETA" -a "$RELEASE" != "3.3" ]; then
254     RELEASE='cat /usr/sys/conf/RELEASE'
255 fi
256 if [ "$RELEASE" != "3.2" -a "$RELEASE" != "3.3BETA" -a "$RELEASE" != "3.3" ]; then
257     echo "${CMDNAME}: can't upgrade \`${RELEASE}\`."
258     echo "${CMDNAME}: upgrade procedure terminates."
259     exit 1
260 fi
```

Reference Number: 1004202

Synopsis: can't install 3.3 on 3.2 EXPORT

Release: 3.3

Description:

The 3.3UPGRADE script fails to install on 3.2EXPORT. When the script checks /etc/motd for the string "3.2", it locates "3.2EXPORT" and responds as an incorrect release.

Work around:

Edit /etc/motd to have your release be "3.2" instead of "3.2EXPORT".

Reference Number: 1001496

Synopsis: problems installing Yellow Pages on a slave server from a remote tape on the master serve

Release: 3.0

Description:

In situations involving Yellow Pages installation on a slave server from a remote tape on the master server (where the remote tape name and the master server name are the same, and the input device is a cursor-addressable terminal), when "Master Name" is entered, the message 'workstation name "xxxx" already in use' appears, and the user is not able to continue.

Work around:

Give a dummy name to the question:
'Tape Server Name :'

Reference Number: 1001521

Synopsis: 3.0 remote install on 3/75 from 3/160 does not work

Release: 3.0pilot

Description:

The remote install procedure described in Unix Installation Manual, Appendix B, does not work when installing a 3/75 machine from a Sun3/160 configured as a standalone running 3.0pilot. This is a bug in both the software and the documentation.

Reference Number: 1001522

Synopsis: 3.0 remote install halts at execute-setup
Release: 3.0pilot

Description:

The remote install procedure described in the Unix Installation Manual, Appendix B, does not work for installing Sun 3 machines from a Sun2 3.0pilot heterogenous server. It is possible to remotely load the minifs, but the procedure halts at execute-setup. The procedure does not do the disk labeling, and nothing is displayed in the Message subwindow. This is a bug in both the software and the documentation.

Reference Number: 1001524

Synopsis: 3.0 setup doesn't display console error messages
Release: 3.0pilot

Description:

In the textsw in bitmap mode, 3.0 setup displays the exit status only--no console error messages are given.

The following is a sample message:

```
"command (/etc/ifconfig ec0 myserver -trailers up || /etc/ifconfig  
ie0 myserver -trailers up) > /dev/null 2>&1 exit status 1"
```

The problem is that command output is being directed to /dev/null, and there is no way to tell what kind of problem caused the ifconfig commands to exit abnormally.

Reference Number: 1001526

Synopsis: setup can't read label from cdc disk
Release: 3.0beta

Description:

The message "Can't read label on /dev/xy1c" occurs when invoking excut-setup with the following disk configuration:

1. /dev/xy0: Eagle disk
2. /dev/xy1: CDC disk (800M)

When diag is run to read the label on the CDC disk, all labels look fine except partition c, which is some huge overflowed number.

Reference Number: 1001527

Synopsis: Mail configuration in setup makes no difference
Release: 3.0beta

Description:

During system setup, the mail server or client is designated. When setup is complete, there is no change reflected in mail setup.

Reference Number: 1001528

Synopsis: Setup doesn't notify that it couldn't load tape
Release: 3.0pilot

Description:

Setup does not give an error message to show if loading of one of the tapes was not successful. For example, when setup was run and read the second tape containing /usr, it responded with a message indicating tape exited with status 1 please insert tape 3, but did not indicate that none of /usr was extracted.

Reference Number: 1001531

Synopsis: setup: client fstab files mount /usr read-only--incorrect
Release: 3.0pilot

Description:

The /etc/fstab that setup creates for a diskless client incorrectly mounts its /usr. The {MC68010,MC68020} partition from the server is mounted as read-only; the /usr partition should properly be mounted as read-write.

Several programs rely on the ability to write into /usr or else they fail. Two examples are "hack" and "gammontool". "hack" tries to access /usr/games/lib/hackdir; "gammontool" tries to access /usr/games/lib/gammonscores. As a result of /usr being mounted as read-only, "hack" will not run on not run on diskless clients, and "gammontool" will report errors several times during a session.

Reference Number: 1001539

Synopsis: setup: does not install sendmail.cf on diskless clients
Release: 3.0beta

Description:

Setup for a server serving diskless clients installs the mail system on the server, but not for the diskless clients. On the server, setup copies either the /usr/lib/sendmail.main.cf file or the /usr/lib/sendmail.subsidiary.cf file to /private/usr/lib/sendmail.cf (specified by the link /usr/lib/sendmail.cf), depending on whether or not the system is setup as a main mail machine. Setup does not perform this copy for any of the diskless clients, which results in /usr/lib/sendmail.cf linking to nothing. sendmail will not be started up in /etc/rc.local without the /private/usr/lib/sendmail.cf file.

Reference Number: 1001542

Synopsis: Setup failed to properly install a yellow pages slave server
Release: 3.0

Description:

When running the 3.0 setup for a 68020, the selected setup option is a yellow pages slave server. The prompt responses are for the name of the master server (which is up at the time) and the full Internet address of the master server. After setup had finished extracting from all four tapes, a message is echoed, similar to the following:

making swagman a yellow pages slave server
The yellow pages databases are not copied over, and no error messages appear.

When the system is booted, ypserv runs, but it becomes apparent that the yellow pages databases had not been copied over.

Reference Number: 1001547

Synopsis: system dies with "trying to free already free inode" while in setup
Release: 3.0

Description:

When customer ran setup on a fairly straightforward server install of 1 client, the (mini-UNIX file system) kernel panicked, giving the error message:

"trying to free already free inode"

This happened 2 out of 4 times. He had not aborted setup and subsequently run it before this happened. Disk label

was slightly nonstandard with usr moved onto second disk.

Configuration details:

- | | |
|---------------------|-------------------------------------|
| 1. 2-85 mbyte disks | 4. Has 1 client (also a Sun-3/75M4) |
| 2. Sun-3/85M4 | 5. 1/4" SCSI tape drive. |
| 3. 3.0 FCS | |

Reference Number: 1001551

Synopsis: Setup won't use the same machine name for remote tape and yp master

Release: 3.2, 3.2pilot, 3.0

Description:

When installing setup from a remote host (the host is the yp master and the terminal being used is the yp slave server), setup does not accept the machine name the second time. The following error message appears:

Workstation name "name" is already in use

Work around:

Don't have setup setup the slave server, and go back in and do it by hand. That is, on the machine being installed, identify the machine as a yp client, and complete the installation. Then, do the following to make it a yp slave server.

```
run /usr/etc/yp/ypinit on the slave
add ypxfer requests to /usr/lib/crontab
go to the master servers and add the slave
to the ypservers map; directions in sysadmin manual.
```

Reference Number: 1001557

Synopsis: SETUP bug seen on high-res monitors for 3/280

Release: 3.2pilot

Description:

The disks screen for setup on a high-resolution monitor is not displayed correctly. The disk partition display hides the prompt text.

Reference Number: 1002661

Synopsis: setup screen "clients" does not show all supported models

Release: 3.2beta

Description:

The "clients" screen in setup does not show all the existing Sun systems. There is no card for models 100, 3/110,

3/260 or 3/280, and no easy-to-locate sources for root and swap size information for these systems in the installation documentation.

Work around:

Use any Sun-3 model for a Sun-3, and any Sun-2 for a Sun-2--they are all the same.

Reference Number: 1003096

Synopsis: setup rearranges disk partitions if a hole is present

Release: 3.1, 3.0

Description:

If a disk other than xy0 has a hole in it (for example, "a,b,space,d,e"), then setup automatically rearranges things to look like "a,b,d,e,space", without receiving any specific request from the user.

Reference Number: 1003159

Synopsis: Tapeless install only works with Class C addresses

Release: 3.0

Description:

When setup is performed as part of a tapeless installation, it is successful only when both the tape server and the client have Class C internet addresses. When setup is performed with Class A and/or B addresses, it does not operate correctly.

Reference Number: 1001565

Synopsis: MAKEDEV sfX

Release: 3.0

Description:

MAKEDEV sfX does a mknod with the wrong minor device numbers. MAKEDEV sfX should also do a mknod for "sfpcX" devices.

The devices that should be created with a "MAKEDEV sf0" command are:

```
mknod sf0 b 9 0      # this is correct in MAKEDEV now
mknod sfpc0 c 33 0   # this was named "rsf" in old MAKEDEV
mknod rsf0 c 33 4    # this was 33 0 in old MAKEDEV
```

Reference Number: 1001566**Synopsis:** stand/copy: uses the wrong pub partition (sometimes)**Release:** 3.0**Description:**

stand/copy does not handle multiple pub partitions correctly (one pub for each architecture). It seems only to use pub0 (/pub.MC68010 on the server I tried). For example, I tried to install a tapeless system using a server which serves both architectures. I followed the directions in the installing docs and put the minifs into /pub.MC68020. Then I booted stand/copy from the server (from /pub.MC68010). stand/copy booted ok, but when I specified that it copy minifs from the pub partition, I got the error message "minifs not found". This effectively prohibited installing until I realized that stand/copy was looking in /pub.MC68010 NOT /pub.MC68020. This is incorrect. There are 2 pub (and 2 stand/copy's) for a reason. There must also be 2 minifs's. If nothing else, the documentation does not cover this at all.

Work around:

If one wants a file from pub0 (/pub.MC68010) use:

```
ie(,hostid-in-hex,0)file
```

If one wants the same file from pub1 (/pub.MC68020) use:

```
ie(,hostid-in-hex,1)file
```

Note the difference in the 3rd parameter - 0 or 1.

Utilities

Utilities
Formatter**Reference Number: 1001748**

Synopsis: 'vtroff -F nonie -me' produces Floating Exceptions with .hl macro
Release: 3.0, 2.2, 2.0

Description:

'vtroff -F nonie -me' produces Floating Exceptions with .hl macro.
It seems to be actually caused by the '\l' troff command.

Work around:

Change the .hl macro definition as follows:

```
.de hl
.br
\l^n(.lu-\n(.iu_
.sp
..
```

The _ at the end of the \l argument
indicates to use the ASCII character _ instead of \ru."

destination directory.

Reference Number: 1002807

Synopsis: .TH macro of -man package defective
Release: 3.0, 3.2pilot

Description:

The bug can be seen by placing the following line in a nroff file
(nroffed with the -man option):

```
.TH u2dm 1D "14 July 1986" "XYZ Corporation" "DM8000 Commands"
```

The following is output as the header:

```
u2dm(1D) UNKNOWN SECTION OF THE MANUAL u2dm(1D)
```

The following is output as the footer:

```
Sun Release 3.0B Last change: 14 July 1986 1
```

Work around:

If the following changes are made to /usr/lib/tmac/tmac.an,

it conforms more closely with the documentation in man(7).

output from diff -c on /usr/lib/tmac/tmac.an

```
*** 112,119
    .if t .po .588i
    .ll 6.5i
    .nr LL \n(1
- ' # this seemed to be missing -- pZ XYZ
- .ds JW\$$4
    .ds JH\$$1V(\$$2V)
    .ds JD UNKNOWN SECTION OF THE MANUAL
    .if \$$2'1C' .ds JD USER COMMANDS
```

--- 112,117 ----

```
.if t .po .588i
.ll 6.5i
.nr LL \n(1
.ds JH\$$1V(\$$2V)
.ds JD UNKNOWN SECTION OF THE MANUAL
.if \$$2'1C' .ds JD USER COMMANDS
```

```
*** 143,150
    .if \$$2'8' .ds JD MAINTENANCE COMMANDS
    .if \$$2'8C' .ds JD MAINTENANCE COMMANDS
    .if \$$2'8S' .ds JD MAINTENANCE COMMANDS
- ' # this also seems to be missing -- pZ XYZ
- .if !\$$5'' .ds JD\$$5
    .wh 0 }H
    .if t .wh -1i }F
    .if n .wh -1.167i }F
```

--- 141,146 ----

```
.if \$$2'8' .ds JD MAINTENANCE COMMANDS
.if \$$2'8C' .ds JD MAINTENANCE COMMANDS
.if \$$2'8S' .ds JD MAINTENANCE COMMANDS
.wh0 }H
.if t .wh -1i }F
```

Reference Number: 1001757

Synopsis: man macro package--TH does not work as documented

Release: 1.1, 1.2

Description:

The .TH macro in the -man macro package does not function properly to set page, chapter, page foot center, page foot left, and page

head center.

Mail

Reference Number: 1001798

Synopsis: A small mail message sent to a long alias fails

Release: 3.0

Description:

When a small mail message (eight or fewer characters) is sent to a long alias (eleven or more recipients), the message "No message body" appears and mail terminates. If the message size is increased or the number of recipients in the alias is decreased, the problem disappears.

Reference Number: 1003370

Synopsis: Mail file command gets confused by cd command

Release: 3.0

Description:

When "file" is used to access mailbox in another directory, then "cd" is used to change to that directory to save messages there, the second "file" command produces an error message. "file" tries to write out the file that was opened previously, but it doesn't keep the pathname to that file, and tries to modify a file relative to the current working directory. "quit" also fails.

Reference Number: 1003400

Synopsis: Mail, v command doesn't set current message

Release: 3.2

Description:

When supplying a message number with "v", Mail doesn't set the current message to that number (unlike other commands that do).

Make

Reference Number: 1003151

Synopsis: make does not always build objects that it should

Release: 3.2

Description:

The 3.2 version of make does not build specified objects when those objects depend on another object that has no build lines in that make file. This occurs with both pre- and post-3.2 make on remote files, when the server and client don't agree on the time.

Reference Number: 1003818

Synopsis: make -f ./file fails, but make -f file succeeds

Release: 3.2

Description:

"makefile -f ./file" responds that it cannot build a file from implicit rules, but "makefile -f file" can.

Work around :

Apparently, make filenames that start with . are trouble, so don't use them.

Reference Number: 1002641

Synopsis: make does an incorrect sccs get on (Makefile) include files

Release: 3.0, 3.2

Description:

Make does not do an "sccs get" correctly on Makefile include files. The get is done to the sccs directory, instead of to the proper .if n .wh -1.167i }F

Reference Number: 1003481

Synopsis: grep -i does not work properly

Release: 3.2

Description:

"grep -i" does not properly match strings having an uppercase character after a closure.

Printer

Reference Number: 1004022

Synopsis: lprm checks for super-user strangely

Release: 3.2

Description:

lprm will not allow a user who used "su" to access root to remove other users' files; the user must login as root. lprm checks for super user privileges by comparing the "getlogname" with "root".

Work around:

rlogin to "root" or login as "root"

Reference Number: 1004074

Synopsis: lprm causes line printer daemon to disappear

Release: 3.2

Description:

With a customized line printer filter used to send lpr output on an HP Laserjet+, when sending a raster file to the printer, then an ASCII text file (for example, /etc/termcap), removing the raster file job with lprm, then finally performing an lpq, the message "No daemon present" appears, and printing will not resume until lpr is run again. This problem does not occur on 2.0 systems, nor does it occur when the file being removed is a straight text file.

Programs

Reference Number: 1001915

Synopsis: script(1) does not output parity thru tty port

Release: 1.x, 2.0beta

Description:

When using ASCII terminals requiring even or odd parity (that is, terminals that are unable to ignore incoming parity, and must be set to even or odd) with script(1), characters that need their eighth bit set to '1' are not accepted by the terminal because they are sent with this bit as '0'. This is the result of script putting the tty into raw mode, and also applies to other programs that put their tty into raw.

Work around:

Manually set the drivers mode to cbreak instead of raw.

Reference Number: 1002024

Synopsis: quota cause long delay

Release: 3.0

Description:

When /bin/login runs /usr/ucb/quota on a Sun 3/75 running 3.0 to login, a delay of 4-5 minutes occurs. The kernel used was built from SDST160 and does not have QUOTA support. There are no NFS filesystems mounted with the quota mount options, and some are explicitly turned off. Some servers are 2.x machines lacking the rpc.rquotad daemon. The /usr/ucb/quota code doesn't check to see that the local filesystems are mounted noquota.

Reference Number: 1002039

Synopsis: INDXBIB causes memory fault message and dumps core
Release: 3.0pilot, 3.0

Description:

INDXBIB causes memory fault message and dumps core.
/usr/lib/refer/inv, which is called by the indxbib shell script,
is the component which produces the memory fault message.

Reference Number: 1002061

Synopsis: ypwhich: 2.x yp client - 'ypwhich -m' fails to 3.0 yp server
Release: 3.0, 2.x

Description:

ypwhich -m fails on a 2.x yp client which is bound
to a 3.0 yp server.
The versions of YP should be compatible enough so that 2.x
clients could bind and use a 3.0 yp server. This is a failure
of this compatibility.

Work around:

Upgrade all your machines to 3.x or don't use ypwhich -m on
your 2.0 machines.

Reference Number: 1002077

Synopsis: vi invoked from makefile aborts on ctrl/c
Release: 3.2beta

Description:

when vi is invoked from inside a makefile, then ctrl/c is typed
(inside vi), make aborts, leaving the screen in vi.

Reference Number: 1002085

Synopsis: bc incorrect in hex fractions
Release: 3.0

Description:

"bc" calculator produces incorrect results when using hex fractions.

Work around:

Accuracy can be controlled by zero padding the fractional value
after the decimal point.

Reference Number: 1002095

Synopsis: catman problems

Release: 3.2pilot

Description:

When running catman, the following error messages appeared:

opendir: mann: No such file or directory

.: No such file or directory

Reference Number: 1002108

Synopsis: indxbib dumps core

Release: 2.0, 3.0

Description:

indxbib(1) which make an inverted index to a bibliography core dumps.

Reference Number: 1002113

Synopsis: ctags confused by struct tags

Release: 3.0, 3.2pilot

Description:

Running "ctags -t" on source with structure "tags" after the word struct (or union tags) keeps those structures out of the tags file. For example:

```
typedef struct ws_set_tag {  
    short    num_ws;  
    int      list[10];  
} ws_set_ignored;
```

will not be included, but the following will be:

```
typedef struct {  
    short    num_ws;  
    int      list[10];  
} ws_set;
```

Reference Number: 1002114

Synopsis: lookbib doesn't find anything unless indxbib run

Release: 3.2pilot, 2.3

Description:

"lookbib" does not find anything unless "indxbib" is run. "lookbib" should create an foo.ig file, then perform an "fgrep" on the file to find the string. The foo.ig file is created, but nothing is found.

Reference Number: 1002128

Synopsis: bug in "strings" misses some valid string matches

Release: 3.2pilot, 3.0

Description:

There is a bug in "strings" that causes some strings to be missed. Here is a program that will demonstrate it:

```

=====
main()
{
  int ch;
  for (ch=0; ch<=255; ++ch){
    printf("%03o---->%c<----%03o\n",ch,ch,ch);
  }
}
=====

```

Compile it, then try the following:

```
% a.out | strings
```

Here is the output from a Sun 3/180 running release 3.0:

```

% a.out | strings
071---->9<----071
072---->:<----072
073---->;<----073
074----><<----074
075---->=<----075
<many lines of output removed here>
173---->{<----173
174---->|<----174
175---->}<----175
176----> <----176
177---->
<----177
200---->
207---->
<----207
210---->
<----210
211---->
<----211
<many lines of output removed here>
373---->
<----373
374---->
<----374
375---->
<----375
    376---->
<----376
377---->
<----377

```

BUG #1: Strings has erroneously ignored the strings of the form "<----nnn\n" where $000 \leq nnn \leq 070$.

BUG #2: Strings makes a policy change at character '\200'; it emits strings which end with an (unsigned) character $\geq \text{'\200'}$.

Reference Number: 1002600

Synopsis: pg always uses default window size

Release: 3.2beta

Description:

"/usr/5bin/pg" does not fill in a window larger than the default window size, and overfills a window that is smaller than the default window size.

uucp

Reference Number: 1002195

Synopsis: timeout for uuxqt lock files is too short

Release: 2.0

Description:

Because uuxqt has a one-hour timeout on its LCK.XQT lockfile, uuxqt ignores the lockfile when a long news job is running (and the fact that the job is still running) and restarts the job.

Reference Number: 1002196

Synopsis: uucp Hayes modem support doesn't work as documented

Release: 2.0, 2.2

Description:

When trying to override the auto-answer feature Sun's uucp sets for Hayes modems, the instructions in the 2.0 Release Manual (at the top of page 12) indicate it is possible to issue Hayes 'Set' commands by prefixing the phone number in the L.sys file with a '-', but this doesn't work.

Work around:

Exchange the documented '-' for the Hayes ';' command. This puts the modem back into command state after dialing, permitting the software to send the Hayes 'Set' command, and setting register 0 to 0.

Reference Number: 1002903

Synopsis: uname can not handle long L.sys entries

Release: 3.2, 3.0

Description:

If given a very long L.sys line, uname responds with spurious host names that include part of the long L.sys line (possibly a security breach). This is because uname has a hard-coded character buffer for storing these things in, and truncates the line to that size without flushing the rest of the entry.

Work around:

Keep L.sys entries short, if possible.

Reference Number: 1003443

Synopsis: uucp and uux allow only 19 fields on an L.sys line

Release: 3.0

Description:

uucp and uux allow only 19 fields on an L.sys line. If there are more fields, uucp and uux usually respond with the following message:

"bad system name"

uucp and uux can also fail randomly, and very complicated logins confuse them.

The problem is found in versys.c, where getargs is used to fill in a 20-word array of character pointers.

Reference Number: 1003870

Synopsis: uucico security leak

Release: 3.2, 3.0

Description:

When "cd /usr/lib/uucp" is entered, then "uucico -r1 -x5 -s<uucp_contact_system> &", uucico tries to connect to <uucp_contact_system>. If it succeeds, it responds with the password.

Work around:

chmod o-rwx /usr/lib/uucp



SunAlis

Other Sun Software Products

SunAlis

Reference Number: 1000020

Synopsis: you can't protect formulas from being pasted over
Release: 3.0

Description:

It is not possible to protect formulas from being pasted over. When formulas are protected, you can't edit the area, but you can paste right over it. This does not occur with regular cells.



SunINGRES



SunINGRES

Reference Number: 1000956

Synopsis: left out single quotes in documentation for report command

Release: 3.0

Description:

On page 4-5 of the 3.0 Report Writer Reference manual it says under examples:

```
report mydb myrep (sal=10000,dept=toy)
```

If you try this command it will complain about badly placed parentheses.

Manual should say:

```
report mydb myrep '(sal=10000,dept=toy)'
```

Reference Number: 1002666

Synopsis: C variables in an equel program are limited to 12 characters

Release: 3.0/25

Description:

The Equel manual should state that declaring C variables longer than 12 characters in eqc produces faulty C code.

Reference Number: 1004061

Synopsis: equel programs that have sunview can core dump under 3.2OS

Release: SunINGRES3.0/25

Description:

An equel program that has sunview code was working under ingres3.0 and Sun OS 3.0. When recompiled under Sun OS 3.2 it core dumps while in MEfree during window_main_loop

Reference Number: 1000991

Synopsis: problem with using cursors in an equel C program (Ingres)

Release: 2.0/23se27

Description:

Attempting to use Sun's cursors routines in an equel C program will result in multiply defined statements.

Reference Number: 1000993

Synopsis: EqueI program name length

Release: 2.0/23se27

Description:

EqueI filenames having more than 14 characters will not work with the EQC preprocessor. The following error message results:
Illegal system filename "testtesttest.qc" used.

Reference Number: 1000994

Synopsis: Bug in doing Joindef's, QBF, over Network/Ingres

Description:

Doing Join Def's over Ingres Net causes Ingres to hang.

Work around:

rlogin into the backend machine and run QBF.

Reference Number: 1003890

Synopsis: f4 fields in a joindef can cause writes to hang

Release: SunINGRES3.0/25

Description:

Using a field of type f4 in a joindef where the display format is altered causes Ingres to hang when you attempt to append a record to the database

Work around:

define the field as an f8 if you need to alter the display format

Reference Number: 1003891

Synopsis: A join field in a joindef won't get modified on a detail row

Release: SunINGRES3.0/25

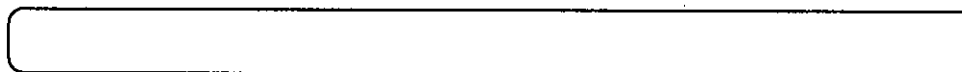
Description:

Given a joindef in which the joinfields are allowed to be modifiable for both the master and the detail, when the user modifies this field and attempts to write it back to the database, the value will only be changed for the master and not for the detail row. The detail row is changed only if there was a modification made that row.

Work around:

Set up a dummy field in the detail to be checked if you want the change to carry over to the detail rows

Lisp



Lisp

Reference Number: 1004094

Synopsis: crash on error when using window system within editor

Release: lisp2.0

Public Summary:

When the Lisp window system is used from within the editor, Lisp aborts (to shell level) when attempting to handle certain user errors related to the window system. When the Lisp window system is used outside the editor, however, these errors seem to be handled properly.

Modula2

Modula 2

Reference Number: 1003608

Synopsis: Modula: referencing procedure as array crashes compiler

Release: modula1.0

Description:

Using brackets instead of parentheses in a procedure call causes the Modula-2 compiler to loop and use up disk space. The compiler crashes once it runs out of disk space on root.

Work around:

Find & fix the syntax error.

Reference Number: 1003943

Synopsis: -f68881 and -O cause assembler error in modula2

Release: 3.2

Description:

Compiling the following with -f68881 and -O options produces an illegal instruction in the assembler code:

```

MODULE opt;
VAR r1, r2: REAL;
BEGIN
    r1 := ABS (r2);
END opt.
```

SunUNIFY



SunUNIFY

Reference Number: 1003907

Synopsis: it is not possible to close sets opened by unisort

Release: SunUNIFY2.0

Description:

You cannot close a set opened via unisort. There is a limit of 8 sets that can be opened. You get an error after 8. The only way to close the sets is to exit the process.

Work around:

Exit process to clear sets.

Reference Number: 1003000

Synopsis: sql queries that use lines 0 and group by cause wrong results

Release: SunUNIFY2.0beta, SunUNIFY1.0

Description:

If you use the lines 0 at the start of an sql query that has a group by clause it appears to return the wrong results.

For example if you do the following query:

```
select Manufacturer_ID
from manf
where State =
select State
from manf
group by State
having count(*) > 1/
```

You get these results:

```
Manufacturer_ID
-----
100
101
103
```

If you start out the same query with:

```
lines 0
```

You get these results:

```
105
```

Reference Number: 1003026

Synopsis: backend process not recognizing ^Z (CTRL-Z) via nfs
mounts--dbon prob

Release: SunUNIFY1.0

Description:

If on(1C) is invoked by running Unify's SQL (it does a dbon), then entering a Control-Z will hang the window over nfs mounts.

Reference Number: 1004287

Synopsis: afa on a reference field causes invalid key msgs. when entering data

Release: SunUNIFY1.0, SunUNIFY2.0

Description:

You have a table that contains reference fields. These fields have a default value placed on them in the referencing table. When you try to add the key field, Unify will not accept this value and gives an error message: Invalid key. There is no 'afa' entry for the key field.

Work around:

Remove the afa entries

Reference Number: 1004301

Synopsis: If a field contains a [a search using an exact match will fail

Release: SunUNIFY1.0, SunUNIFY2.0

Description:

You have a field in UNIFY which is a string. If you input data with a left bracket ([), UNIFY is unable to find this when doing a search on an exact match in either ENTER or on SQL. If in ENTER you have a field that is 'this is a [test]' and a field that has 'this is a test' and then you try to execute an exact query on the first one, the second one is what is found. In SQL no matches are found.

Work around:

Use either * or ? where the [should go.

Reference Number: 1001617

Synopsis: sfmaint only displaying one page of information

Release: SunUNIFY1.0

Description:

When trying to display screen form coordinates (sfmaint) only one screen of information is displayed even though more information exists.

Work around:

Workaround is to check the screen field definitions using modify (instead of inquire) mode; Next Page works in that mode.

Reference Number: 1002644

Synopsis: ^C during a query that is on a btree index will cause problems

Release: SunUNIFY1.0

Description:

If a customer tries to run a query on a field that has a btree index built on it and then interrupts with a ^C, he is unable to run another query on that record until he backs out of that menu and starts it up again.

Reference Number: 1002986

Synopsis: Time fields on right side of nested sql return wrong info

Release: SunUNIFY1.0

Description:

Using a field of type time on the right side of a nested query will cause no records to be found even though some should have been.

Reference Number: 1003165

Synopsis: sql where clauses fail on 'const' = field

Release: SunUNIFY1.0

Description:

Consider the following typescript session, and note how the order is critical. For correct results one must query
or field = const, and not const = field:

```
Sun UNIFY SQL -- VERSION 1.0
Copyright Unify Corporation 1983,1984,1985
Copyright Sun Microsystems, Inc. 1986
```



```
sql> select * from ccl_t/
recognized query!
```

```
concl_val|conclusion_desc
will fix | bug is open
not a bug | bug is closed
```

```
.
```

```
.
```

```
from customer |the bug is from customer
```

```
sql> select * from ccl_t where 'will fix' = concl_val/
recognized query!
```

There were no records selected.

```
sql> select * from ccl_t where concl_val = 'will fix'/
recognized query!
```

```
concl_val|concl_desc
will fix | bug is open
sql>
```

Work around:

Change the order of the equality test.

Suggested fix:

Any known fix to apply to this problem

Reference Number: 1003230

Synopsis: Help screen cause reference fields to get corrupted on screen

Release: SunUNIFY1.0

Description:

You have an ENTER screen for a table that contains fields which are references to another table. You then call up a help screen that is drawn over these fields. When the help screen goes away, these fields are not correctly refreshed.

Work around:

Arrange the layout of your screen and help screens to avoid this problem.

Reference Number: 1003872

Synopsis: sql query might ignore (trailing) AND clause

Release: SunUNIFY1.0

Description:

Consider the following query:

```
select count(*)
from bg_cal_t
```

```

where
  comp_call = 'other'
and
  bugid_call = select bugid_other
                from other_t
                where field_numbr_other = 255
                ;
/

```

There is no field_numbr_other with value 255, hence the second AND clause is not satisfied. However, when the query is run in the above form, it acts as if the second AND clause is missing. Simply swap the order of the AND clauses and the query returns the correct result, 0.

Work around:

Stating the more complicated clause first helps.

Reference Number: 1003931

Synopsis: sql finds matches where there are none

Release: SunUNIFY1.0

Description:

Consider the following two queries:

```

1.) lines 0
   select 'bad submit', b_val
   from b_tbl
   where prog_val = 'submitted'
   and b_val in
     select b_pi
     from pi_tbl
     where sub_date = **/**/**
   ;
/

```

There are no pi_tbl entries with null submit dates; therefore, there can be no records selected. In fact, if you run just the second select, sql is smart enough to state that no records were selected. Yet the full query will yield "satisfying" ids, which is false.

```

2.) lines 0
   select 'bad checked', b_val
   from b_tbl
   where
     b_val in
       select b_pi
       from pi_tbl
       where checked_date = **/**/**

```

```

; and
[ prog_val = 'checked' ]
/

```

There are no b_tbl entries with prog_val set to 'checked'. Therefore, there can be no records selected. Yet this query produces results. There are many records which have a null checked_date.

Work around:

Rephrasing the query to the following seems to work:

```

lines 0
select 'bad submit', b_val
from b_tbl
where
    b_val in
        select b_pi
        from pi_tbl
        where sub_date = **/**/**
;
and
    prog_val = 'submitted'
/

```

In the second case, rephrasing the query to the following seems to solve the problem:

```

lines 0
select 'bad checked', b_val
from b_tbl
where
    [ prog_val = 'checked' ]
and
    b_val in
        select b_pi
        from pi_tbl
        where checked_date = **/**/**
;
/

```

Hence, it appears that putting the failing clause first is what is required. Note that the successful query is very context sensitive, making it difficult to pose queries that are good for varying cases.

Reference Number: 1004164

Synopsis: SQL loses editor buffer if ^C (CTRL-C) is entered

Release: SunUNIFY1.0

Description:

SQL loses edit buffer if ^C (CTRL-C) is entered

Work around:

Save the editor buffer to a named file.

After the sql> prompt just enter

start 'filename'

The problem may not be so apparent if sql is invoked within the Unify menu system.

Reference Number: 1004259

Synopsis: SQL does string comparisons incorrectly

Release: SunUNIFY2.0

Description:

It is not possible to compare equal strings of unequal size in SQL and get a match when both strings are variables. They should match when both are left justified because of blank padding, but they don't. It is also possible to get strings to match incorrectly when both are variables and one has an asterisk at the end of it. The problem is present in 4.0 source code. In addition, unequal sized blank string constants are not equal, which is incorrect according to the standard (test with where ' ' = ' ').

The string 'abc' ^= 'abc ', yet 'abc' = 'abc*' when 'abc*' is the value of a field and not a constant.

Work around:

Make all string fields that must be compared with another field (and not a constant) equal in size.

Reference Number: 1003975

Synopsis: schemaload can core dump with delete_tables option

Release: sunsimplify1.0

Description:

The following code appears in remove_tables:

```
/* search thru field table for reference field */
if (seq_open(record, DB_FIRST, &scan_id) != DB_SUCCESS) {
    return(errno = DBERROR);
}
```

```
while (seq_next(&scan_id) == DB_SUCCESS) {  
    ....
```

When performing schemaload, passing the address of scan_id to seq_next caused schemaload to seg fault when delete_tables is specified.

Reference Number: 1004123

Synopsis: dbload does not handle floats larger than 179

Release: sunsimplify1.0

Description:

dbload cannot handle floating point field specified with lengths longer than 179. This value is intended to be for screen display purposes only; larger float values should be saved. When attempting a SunUnify dbload, the following error message appears:
db can not convert - field value can not be created.



Revision History

<i>Revision</i>	<i>Date</i>	<i>Comments</i>
FINAL	May 1987	Fourth issue of Software Technical Bulletin (Software Information Services).







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