![Sun Microsystems logo](sun® microsystems)

Software Technical Bulletin
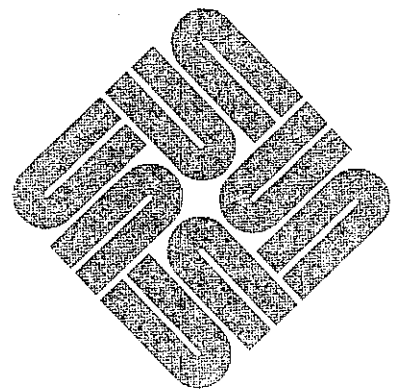## *March 1988*

Software Information Services

Software Technical Bulletin
March 1988

Software Information Services

Software Technical Bulletins are distributed to customers with software/hardware or software only support contracts. Send comments or corrections to 'Software Technical Bulletins' at Sun Microsystems, Inc., 2550 Garcia Ave., M/S 2-312, Mountain View, CA 94043 or by electronic mail to *sun!stb-editor*. U.S customers who have technical questions about topics in the Bulletin should call the Sun Customer Software Services AnswerLine at **800 USA-4-SUN**. Other customers should call the numbers listed in *World Hotlines* appearing in Section 1.

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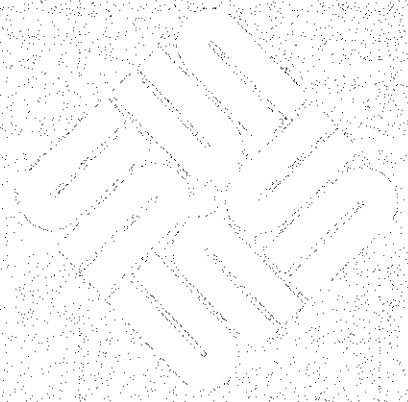
NOTES & COMMENTS

Editor's Notes

The March 1988 Software Technical Bulletin (STB) editor's notes include notes on the monthly software product release tables, world hotlines for use by customers outside the U.S., STB duplication permission, an Errata for corrections, an announcement of a new customer service of STB articles based on Software Field Alerts, and the **Hackers' Corner.**

Expanded Current Sun Software Products and Release Level Tables

The five tables showing current Sun software product release levels appear monthly. These tables show release levels for operating systems, communications products, unbundled languages, and unbundled applications.

World Hotlines

For Sun customers served by your local service groups, use the customer service telephone numbers listed in this monthly item. Also, look to this section during the upcoming year for details on your local support call policies and procedures.

STB Duplication Permission

This notice is published monthly, giving customers useful information regarding ordering and duplicating additional STB copies.

Errata

Look to the *Errata* article appearing later in this Notes and Comments section. It contains corrections to a table listing available disk and tape units and their respective controllers, and a note on a bug fix in SunOS release 3.5 concerning Super Eagle disk drives.

Software Field Alerts

The Customer Service Division (CSD) is putting an internal Software Field Alert program into place. STB articles will be generated as quickly as possible from this program to alert customers to a known problem to provide a solution to the problem.

The articles based on such alerts will include a description of the symptom or topic, the problem definition, corrective action needed, and other comments.

The Hackers' Corner

This month's **Hackers' Corner** includes code that allows system users to conveniently bring up manual pages in a text edit window. This allows you to scroll up and down the manual page as needed.

Again, please note that such applications, scripts, or code are not offered as released Sun products, but as items of interest to enthusiasts wanting to try out something for themselves. They may not not work in all cases, and may not be compatible with future SunOS releases. Please consult your local shell script or programming expert regarding any application, script, or code problems.

Thanks.

<div align="center">The STB Editor</div>

Software Release Levels

As of January 22, 1988

Operating Systems

Product Name	Current Release
SunOS (Sun-2 and Sun-3 Operating System)	3.5
Sys4 (Sun-4 Operating System)	3.2

Communications Products

Product Name	Current Release
SunLink BSC3270	3.0
SunLink SCP	3.0
SunLink BSCRJE	5.0
SunLink Local 3270	5.0
SunLink SNA3270	5.0
SunLink Peer-to-Peer	5.0
SunLink IR	5.0
SunLink DDN	5.0
SunLink DNI	5.0
SunLink OSI	5.0
SunLink MCP	5.0
SunLink TE100	4.0
SunLink X.25	5.0
SunLink SCA	5.0

sun
microsystems

Unbundled Languages

Product Name	Current Release
Sun FORTRAN* (for Sun-2 and Sun-3 systems)	1.0
Sun FORTRAN* (for Sun-4 systems)	1.05
SunPro	2.0
NeWS	1.0
Sun Common Lisp-D	2.1
Sun Common Lisp-E	1.1
Modula-2	1.0
Cross Compilers	2.0

*Sun FORTRAN Note: The £77 compiler is automatically included with SunOS
Release 3, which includes SunOS Releases 3.2, 3.4, and 3.5. Sun FORTRAN Release 1.0
(for Sun-2 and Sun-3 systems) and Sun FORTRAN Release 1.05 (for Sun-4 systems) are
value-added products that support VMS extensions to the £77 compiler, and must be
purchased separately from the operating system.

Unbundled Graphics

Product Name	Current Release
SunGKS	2.1

Unbundled Applications

Product Name	Current Release
SunAlis	2.1
SunINGRES	5.0
SunSimplify	1.0
SunUNIFY	2.0
Transcript	2.0
SunIPC	1.1
PC-NFS	2.0
SunTrac (for Sun-2 and Sun-3 systems)	1.0
SunTrac (for Sun-4 systems)	1.0/3.2

**Current Sun Software
Products and Release Levels**

The preceding tables contain lists of current Sun software products and their respective current release levels.

You will note that the Software Technical Bulletin (STB) contains articles from time to time that detail technical changes in a given software product's next available release.

Please contact your sales representative if you decide that you would like to update the release level of a Sun software product you already use, or wish to purchase another product. Use the tables to determine whether your release is the current release level.

These tables appear monthly in the STB for your convenience.

World Hotlines
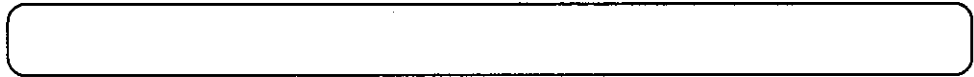
World Hotlines

Sun Customers throughout the world have service hotlines available for both software and hardware support questions. The service hotlines are shown below. If your country is not shown in the table, please phone your local Sun sales office.

Australia	Sun Australia	(011-61-2) 957-2522
	Lionel Singer Group	(011-61-2) 957-2655
Canada	Montreal Branch	(514) 879-1914
	Ottawa	(613) 748-9617
	Vancouver Branch	(604) 641-1296
	Western Branch	(403) 295-0150
France	Paris	(33) 1 4630 2324
	Sun Microsystems France SA	
Germany	Munich	(49) 89/95094-321
	Sun Microsystems GmbH	
Japan	C. Itoh Data Systems	(011-81-3) 497-4676
	Nihon Sun	(011-81-3) 221-7021
The Netherlands	Soest	(31) 2155 24888
	Sun Microsystems Nederland BV	
Switzerland	Zurich	(41) 1 828 9555
	Sun Microsystems Schweiz AG	
United Kingdom	Camberley	(44) 276 62111
	Sun Microsystems UK Ltd	
United States	All,	1-800-USA-4-SUN
	including Puerto Rico	
Intercon	All countries outside the	(415) 691-6775
	USA, Europe, and northern Africa	

STB Duplication

Duplicating the STB

Your company's software support contract includes a monthly issue of the STB, which contains a quarterly, updated Customer Distributed BugsList (CDB). Each month, the copy of your STB is mailed to your company's primary contact person or department. Sites with more than one contract may receive more than one STB copy, depending on how the contracts are set up.

Your primary contact person or department may duplicate this 'master' STB copy for all Sun workstation end-users. So long as you duplicate copies and route them only internally, there are no copyright infringement problems.

This limited permission for duplication is for your convenience only, however, and does not include any duplication for resale, for distribution outside your company, or for distribution to employees of companies not having a Sun software support contract.

Direct STB Purchase

The STB is sent to the primary contact person named in all software support contracts. Sun is looking into methods by which customers holding these contracts may purchase extra copies directly.

Look to this column for an announcement regarding the purchase of extra STB copies.

Further Questions

If you have any questions, comments, or articles regarding the STB or CDB, please send your ideas and questions to *sun!stb-editor*.

Errata

Errata

Please enter the changes described in the following paragraphs into the named short subjects or articles.

Controller and Drive Table

In the article entitled *Controllers and Drives* on page 776 of the November 1987 STB, please substitute the amended table appearing below for the one included in the original article.

This also table is reprinted in the January 1988 STB on page 64 in the article entitled *SunOS Installation Aid*. Please make a similar substitution in this second article.

Available Controllers and Drives					
Controller and UNIX Device Name	Address (Hex)			Drives	Remarks
	Machine Type	First Controller	Second Controller		
Adaptec sd	3/50/60 Multibus VMEbus	140000 80000 200000	NA 84000 NA	Fujitsu 2243 Micropolis 1304 Micropolis 1325	71Mb, 5-1/4", SCSI 42Mb, 5-1/4", SCSI 71Mb, 5-1/4", SCSI
Emulex MD21 sd	3/50/60 Multibus VMEbus	140000 NA 200000	NA NA NA	Micropolis 1355 Toshiba MK156F Micropolis 1558	140Mb, 5-1/4", SCSI 140Mb, 5-1/4", SCSI 337Mb, 5-1/4", ESDI
Xylogics 450 xy	all	ee40	ee48	Fujitsu 2322 Fujitsu 2351 Fujitsu 2312 Fujitsu 2284	130Mb, 8", SMD 374Mb, 10-1/2", SMD, Eagle 71Mb, 8", SMD, 130Mb, 14", SMD,
Xylogics 451 xy	all	ee40	ee48	Fujitsu 2361 Fujitsu 2333 CDC 9720-368	694Mb, 10-1/2", SMD, Super Eagle 280Mb, 10-1/2", SMD 280Mb, 10-1/2", SMD
Sysgen st	NA	NA	NA	Archive 9020 Archive 9020B Cypher 420-CT Archive 9050B Wangtech 5099EG11	20Mb, 1/4" cartridge 20Mb, 1/4" cartridge 20Mb, 1/4" cartridge 45/60Mb, 1/4" cartridge 45/60Mb, 1/4" cartridge
Emulex MT02	NA	NA	NA	Archive 5945C Wangtech 5099EN24	45/60Mb, 1/4" cartridge 45/60Mb, 1/4" cartridge
TapeMaster mt	NA	NA	NA	CDC 92181	30Mb, 1600bpi, 1/2" reel, 2400 feet
Xylogics 472 xt	NA	NA	NA	Fujitsu 2444AC	110Mb, 6250bpi, 1/2" reel, 2400 feet

Super-Eagle Partition Size

In the short subject entitled *Super Eagle Disks* on page 1009 of the December 1987 STB, please add a note that this bug is fixed in SunOS release 3.5.

2

ARTICLES

ARTICLES

SunOS and Real Time

Real-Time Processing

Some Sun customers are interested in real-time operating systems and applications. They are interested in the current ability of SunOS to perform real-time tasks.

What is Real-Time Processing?

Real-time is OS processing driven by asynchronous, external events. The processing has predictable latency or response time to *each* event, providing *predictable* responses to *all* important tasks. In this case, the *events* are the driving force that determine OS processing adequacy. The OS response time to each event must remain predictable.

Incidentally, this is not the same as *timesharing*, which is OS processing driven by multiple *human* users, each providing a unique set of asynchronous inputs during the same period of time. The OS need only provide a *quick* response in human-perceivable time to each task from each user. In this case, the *users* define whether the OS is responding quickly enough, without reference to kernel processing, priorities, scheduling, paging, or swapping. These concerns are transparent to the user.

In some cases a customer requests 'real-time', but are unsure of exactly what is needed. True real-time requires process context switching in under 1/4 millisecond, interrupt latency under 50 microseconds, and so forth. To meet most hard real-time requirements, you need a real-time executive (a very small, very fast, few-featured operating system kernel).

In fact, most of the time 'soft real-time' is what is needed. The customer wants output to appear on the screen (or lights to light, and so forth) with no noticeable delay. Typically, the events which require response are in the 5-100Hz range. A Sun-3 can very often process this sort of application, especially if the customer is willing to program carefully.

Frequently asked questions are shown below, along with answers.

□ *Is Sun addressing any real-time issues?*

Many aspects of real-time processing are supported by SunOS at this time; several are not, though. The standard SunOS supports interprocess communication, shared memory, and limited control over process priorities for many real-time applications. Sun is aware of the areas where additional development is needed.

□ *If so, what are they and when will they be released?*

The issues involve considerable and significant reprogramming of the kernel, and discussion of any availability of a true, real-time kernel is premature at this time. However, some custom modifications to the SunOS kernel are already available.

□ *Is Sun CSD Consulting doing some work in this area?*

Yes. Sun CSD Consulting has developed specials that provide features that may be useful in real-time processing.

□ *Can SunOS fix pages in memory?*

Yes. The available Sun CSD Consulting special `CONSULT-PLOCK` offers some control of paging and swapping.

□ *Is all real-time processing alike, or are there variations of such processing?*

There are variations of real-time processing.

In the most demanding cases, real-time processing requires a high-speed, closed loop control of a computer monitoring and affecting natural phenomena. In the industrial setting this typically involves sensors placed on production or manufacturing machinery. Other settings include basic scientific experiments, applied research, and practical applications (geophysical exploration, well drilling, and earthquake monitoring and prediction).

Some of these applications require OS context switching in under 1/4 millisecond and interrupt latency under 50 microseconds.

Less demanding real-time applications include those whose natural phenomenon to be monitored occur at a slower rate. For example, lighting lights and changing screen images may be done at a 5-50 Hz event rate.

In the extreme, if the event rate becomes slow enough, a user may be mislead into thinking that the OS offers real-time processing when it is actually only doing timesharing processing fast enough to remain predictable, providing reliable responses to all of the incoming events.

Real-Time OS Requirement Overview

The four major requirements which must be addressed in most real-time applications are listed below.

Latency	response time to some external event
Interrupt Rate	frequency of interrupts
Multi-Threaded Kernel	ability to preempt a process during a system call
Process Priority Control	ability to specify, precisely, the relative importance of the various processes

The first two real-time requirements may be met by the raw speed of the Sun3 hardware in many applications. The second two requirements are not supported by the standard SunOS.

Why Standard SunOS Is not a 'True' Real-Time OS

The standard SunOS is not a 'true' real-time OS for the reasons described below.

□ *Low-Resolution Clock*

Real-time applications vary so much that no single clock speed is acceptable. The standard SunOS has a 50 Hz, 20 millisecond clock. A resolution time of 10 milliseconds would be considered acceptable for many applications, and is not unavailable at this time. Yet, many real-time applications require 1 millisecond clock resolution.

□ *No Multi-Threaded Kernel*

The standard SunOS has a single-threaded kernel, with no preemption. Predictability is destroyed since the user knows neither the kernel response time nor when processing has been completed for a particular input event. Differences between single- and multi-threaded kernels are discussed in the following paragraphs.

In UNIX, a process cannot be preempted while running a system call. This means that once a system call starts, the process on whose behalf the system call is executing will continue executing until either the system call completes, or until the system call waits for some external event (such as disk I/O completion).

If an interrupt occurs during a system call, it can be serviced before the system call completes (the system call can be interrupted); however, when the interrupt service is complete, the system call will be resumed, even if some other, higher-priority process can now run as a result of the interrupt having occurred. (One caveat on a system call's ability to be interrupted: some system calls disable various of the interrupts during some portion their operation. The interrupt will remain pending until the system call enables it.)

□ *Process Priority: Heuristic Adjustment of Scheduling Priority*

The system recomputes the priority of a process once each second. This priority decays as CPU usage increases. The user can exert only limited control by changing the setting of `nice`. Finally, the algorithm used to recompute the process priority decays exponentially at a rate proportionally faster when the system is busy. This is done in response to CPU usage which increases linearly.

This issue, controlling process priority, exists because of the current implementation of the scheduler. The scheduler determines which process runs next, and the decision-making done is based on the process's priority. The priority is based not only on some things set by the user (the `nice` of the process), but also by, for example, how long the process has run since the last time it voluntarily gave up the CPU. The longer a process runs, the less important it becomes, until it voluntarily gives up the CPU.

Many times, those designing a real-time system will want to set the process priorities themselves, without the scheduler automatically adjusting them based on other definitions of what is important and what is not.

□ *Process Priority: Round-Robin Scheduler*

Within the context of scheduling priority just discussed, the scheduler then schedules all processes having the same priority on a round-robin basis. The time slice is predefined at 100 milliseconds, which is large for most real-time applications.

□ *Virtual Memory*

Process paging and swapping leads to unpredictable and unacceptable delays.

□   *Blocking or Polled I/O Only*

Interrupt-driven I/O is available in the device driver only. Pseudo-simulatable interrupt-driven I/O is possible with *fork()* and *signal()*. This creates another process to which the driver may send signals. However, *signal()* is slower than `sleep` or `wakeup` in the kernel.

Single- and Multi-Threaded Kernels

Figures 1 and 2 depict some of the differences between a single-threaded kernel (figure 1) and a multi-threaded kernel (figure 2). Both figures show two processes, A and B; where process B is the higher priority process (i.e. more important) of the two. Process A issues an `open()` system and process B issues a `read()` system call.

In both cases, execution begins at point 0. At point 1 in each figure, the `read()` is issued, causing control to transfer to the appropriate device driver in the kernel. At point 2 in both figures, the driver in the kernel has performed the necessary set-up for the data transfer. The device controller is sent the appropriate commands to start the transfer. At this point 2 in both figures, the driver issues a `sleep` kernel call, causing it to await completion completion of the I/O operation.

After the `sleep`, process A can execute. Recall that it is of a lower priority than process B, and so A will only execute when B is not running. In both figures, execution control passes to point 3. At point 4, an `open()` system call is issued. Control transfers to the kernel for execution of the system call.

During the execution of the `open()`, the I/O requested at point 2 completes. This is shown at point 5, with the disk pictured issuing an interrupt to the CPU. This interrupt causes control to transfer to point 6. This is the beginning of the interrupt service routine for the disk's device driver.

What happens next is the key difference between the two figures, between a single- and a multi-threaded kernel. The interrupt handler finishes its task. At this stage, point 7, process B (the higher priority process) can now resume execution since the I/O for which its `read()` was waiting has now completed.

In a multi-threaded kernel, execution control passes from point 7 to point 8 in figure 2, which is in the `read()` which was executing on behalf of process B. In this case, the `read()` completes. Control returns to the application code running in process B, at point 10.

In a single-threaded kernel, however, execution control passes back to the `open()` call running on behalf of process A, *even though process B and its* `read()` *are of a higher priority.* Execution of process A's `open()` completes at point 8 in figure 1. Control begins to revert to process A's application code.

At this point, execution resumes with the runnable process of the highest priority, which is now process B. At point 9 in figure 1, execution control is 'diverted' so that the `read()` system call running on behalf of process B resumes execution.

At point 10, the `read()` completes. Control returns to the process B application code, at point 11.

Note that in figure 1, the single-threaded kernel, the `open()` system call completes, *even though a higher-priority process could be run.* Whereas in figure 2, the multi-threaded kernel, execution is always of the highest-priority runnable process. The SunOS kernel is similar to that shown in figure 1.

Real-Time Specials and
Questions

Those Sun customers considering SunOS modifications to support real-time applications will need to answer the questions listed below. This will expedite determining whether a Consulting special will meet your needs.

1. How frequently does an event which requires a 'real-time' response occur, both at peak, and on average?

2. What must be done to service each event? What must be done *right now*? What must be done eventually, but not necessarily *right now*?

3. What funds are available for this real-time special?

4. What hardware configuration are you using now to support the application, if it currently exists?

5. What hardware is under consideration in the application?

6. Do you have much software expertise in-house? Hardware expertise?

7. What architectural constraints do you have on the solution? For example, must the application be implemented strictly as a user process, must it be a hardware-only solution, must the application request permission to proceed from other processes, each of which might have other conditions that must be met before answering?

Calls to Consulting will be most productive when customers have given the above listed points some consideration. These will be among the first issues discussed during calls to Consulting regarding real-time specials.
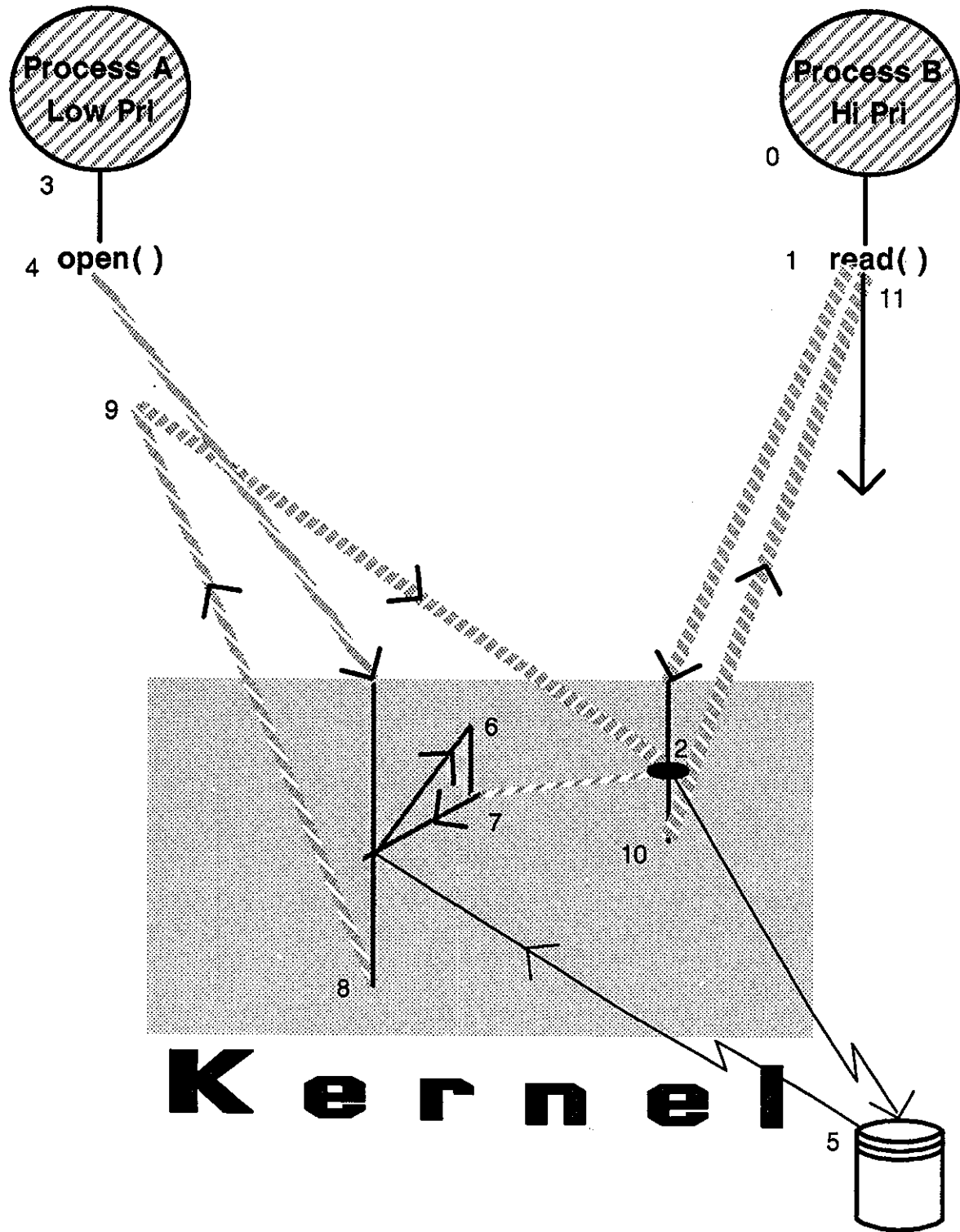
Figure 1: Single-Threaded Kernel
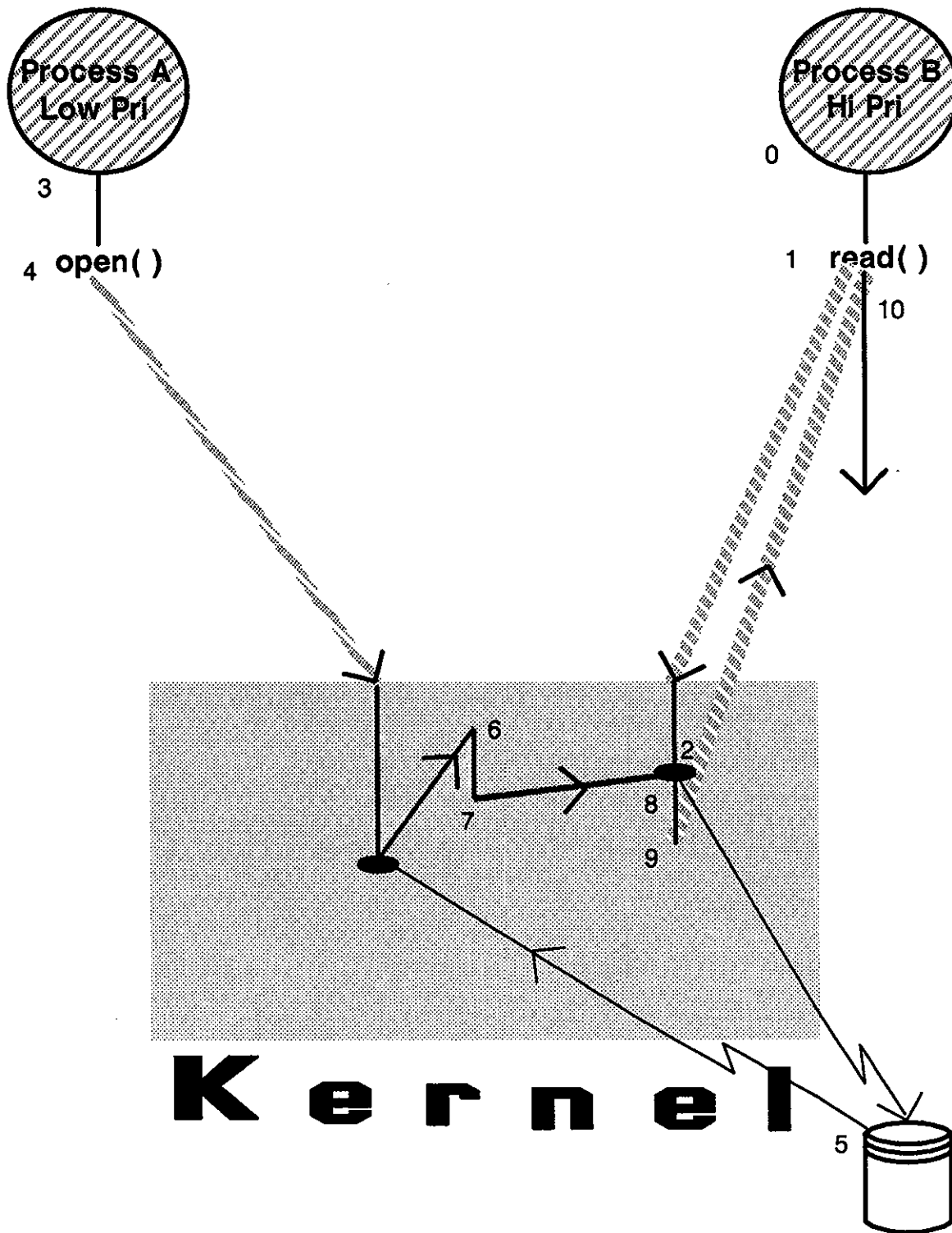
Figure 2: Multi-Threaded Kernel

TOD in Leap Years

Leap Year Clock: the Problem and Workaround

Sun customers may observe problems with setting the system clock as of January 1, 1988. Please use one or more of the three workarounds appearing at the end of this article as appropriate.

Bug Reference ID 1007764

This software problem is addressed by bug reference number 1007764. This bug is to be fixed in an upcoming SunOS release. Use the workarounds in this article in the meantime.

The Problem Defined

As of January 1, 1988, there is a problem on all Sun3 (68020) machines running SunOS releases 3.2 through 3.5; and on all Sun4 (SPARC) machines running either SunOS release Sys4-3.2 FCS or release Sys4.3.2L GAMMA. This problem does not exist on Sun2 (68010) machines.

The problem is due to a software bug wherein the clock routine in the kernel puts the clock chip into an uncertain state if you attempt to set the date. The error indications are described below.

Upon booting `vmunix`, the below error message appears.

```
WARNING: TOD clock not initialized -- CHECK AND RESET THE DATE!
```

The system date will start to drift widely. Any attempts to actually set the date will have only a temporary effect. The date you set will be good for about 30 seconds.

The Workarounds

The following three paragraphs contain procedures that allow you to patch both the kernel and system object files for the configurations listed below.

□   *Sun3s running SunOS releases 3.2, 3.3, 3.4, and 3.5*

□   *Sun3s running SunOS releases 3.0 and 3.1*

□   *Sun4s running SunOS releases Sys4-3.2FCS and Sys4-3.2L GAMMA*

Sun3s and SunOS Releases 3.2, 3.3, 3.4, and 3.5

This patch is for diskful and server machines only. Diskless client machines sharing a kernel need to be fixed on their server.

Log in as `root` and run the command shown below.

```
echo 'resettodr+c0?i' | adb /vmunix -
```

You should then see one of the two following messages.

```
_resettodr+c0:        bnes      _resettodr+0xca
_resettodr+0xc0:      bnes      _resettodr+0xca
```

If you see either of the two messages shown below instead, the patch has already been applied to this system. Continue with the rest of this patch procedure in any case.

```
_resettodr+c0:        bnes      _resettodr+0xce
_resettodr+0xc0:      bnes      _resettodr+0xce
```

If you saw none of the four lines shown above, discontinue this patch procedure and contact Sun Microsystems Customer Service. See the *World Hotlines* in the Notes and Comments Section for the appropriate customer service telephone number.

Having seen either of the two above messages, as *root*, enter the following command.

```
echo 'resettodr+c0?w 660c' | adb -w /vmunix
```

Reboot and then set the date.

If you build kernels for your system, or are a server for diskless clients, as root, enter the following commands.

```
cp /sys/OBJ/clock.o /sys/OBJ/clock.o-
echo 'resettodr+c0?w 660c' | adb -w /sys/OBJ/clock.o
```

Now rebuild your kernel and the kernels for your diskless clients or both.

Sun3s and SunOS Releases 3.0 and 3.1

This patch procedure is for diskful and server machines only. Diskless machines sharing a kernel need to be fixed on their server.

As root, run the following command.

```
echo 'todset+0xb4?i' | adb /vmunix -
```

You should see the following message.

```
_todset+0xb4:      bnes      _todset+0xbe
```

If you see the line shown below, the patch has already been applied to this system. Continue with the rest of this patch procedure in any case.

```
_todset+0xb4:      bnes      _todset+0xc2
```

If you saw neither of the above messages, discontinue this patch procedure and contact Sun Microsystems Customer Service. See the *World Hotlines* in the Notes and Comments Section for the appropriate customer service telephone number.

Having seen either of the two above messages, as *root*, enter the following command.

```
echo 'todset+0xb4?w 0x660c' | adb -w /vmunix
```

Reboot and then set the date.

If you build kernels for your system, or are a server for diskless clients, as `root`, enter the below commands.

```
cp /sys/OBJ/clock.o /sys/OBJ/clock.o-
echo 'todset+0xb4?w 0x660c' | adb -w /sys/OBJ/clock.o
```

Now rebuild your kernel and the kernels for your diskless clients or both.

Sun4s and SunOS Releases Sys4-3.2 FCS and Sys4-3.2L GAMMA

This patch procedure is for diskful and server machines only. Diskless machines need to be fixed on the server.

As `root`, issue the command shown below.

```
echo 'resettodr+0x110?i' | adb /vmunix -
```

You should then see the following message.

```
_resettodr+0x110:              sub      %i5, 0x1, %i5
```

If you see the line shown below, the patch has already been applied to this system. However, continue with the rest of this patch procedure in any case.

```
_resettodr+0x110:              sub      %i5, 0x0, %i5
```

If you saw neither of the above messages, discontinue this patch procedure and contact Sun Microsystems Customer Service. See the *World Hotlines* in the Notes and Comments Section for the appropriate customer service telephone number.

Having seen either of the two above messages, as *root*, enter the following command.

```
echo 'resettodr+0x110?W ba276000' | adb -w -k /vmunix /dev/mem
```

Reboot and then set the date.

If you build kernels for your system, or are a server for diskless clients, as `root`, enter the following two commands.

```
cp /sys/sun4/OBJ/clock.o /sys/sun4/OBJ/clock.o-
echo 'resettodr+0x110?W ba276000' | adb -w /sys/sun4/OBJ/clock.o
```

Now rebuild your kernel and the kernels for your diskless clients or both.

Finding File Types

Determining the Filesystem Type

Customers often need to know whether a particular file is on a local or NFS-mounted filesystem.

The code shown below in this article allows you to determine whether a given file is located on a local file filesystem or is on a filesystem mounted over the network.

Please note that the code appears complex since there is no straightforward way to determine the filesystem type.

The Filesystem Type Program

Use the program shown on the next page to determine the filesystem type for a particular file.

To use this program, first store it in your home directory in a file named `filetype.c`. Then compile the program and use the below calling sequence. A typical program response is also shown. Note to substitute your actual file name for the italicized name shown below.

```
machine% cc filetype.c -o filetype
machine% filetype name.of.file
nfs
machine%
```

The program follows.

```c
#include <stdio.h>
#include <mntent.h>
#include <sys/types.h>
#include <sys/stat.h>

main(argc, argv)
    int             argc;
    char            *argv[];

{

    struct stat     s, s2;
    FILE            *mntent;
    struct mntent   *mp;

    if (argc != 2) {
        fprintf(stderr, "Usage: %s <filename> \n", argv[0]);
        exit(1);
    }
    if (stat(argv[1], &s) < 0) {
        fprintf(stderr, "%s: can't stat %s\n", argv[0], argv[1]);
        exit(-1);
    }
    if ((mntent = setmntent(MOUNTED, "r")) == 0) {
        fprintf(stderr, "%s: can't setmntent %s\n", argv[0], MOUNTED);
        exit(-1);
    }
    while ((mp = getmntent(mntent)) != 0) {
        if (strcmp(mp->mnt_fsname, argv[1]) == 0) {
            endmntent(mntent);
            printf("%s\n", mp->mnt_type);
            exit(0);
        }
        if (stat(mp->mnt_dir, &s2) < 0) {
            fprintf(stderr, "%s: can't stat %s\n", argv[0], mp->mnt_fsname);
            exit(-1);
        }
        if (s.st_dev == s2.st_dev) {
            endmntent(mntent);
            printf("%s\n", mp->mnt_type);
            exit(0);
        }
    }
    fprintf(stderr, "%s: couldn't find mount point for %s\n", argv[0], argv[1]);
    exit(1);
}
```

SunIPC and SunOS 3.5

**Installing SunIPC using
SunOS Release 3.5**

Information in this article applies for Sun workstations running SunOS release 3.5 to which SunIPC software is being added. Both the installation problem and the workaround appear below.

The Problem Defined

Customers installing SunIPC software on a Sun workstation already running SunOS release 3.5 will note that the install script hangs during the build for the new kernel. This problem may not apply for those machines already running SunIPC software that are then upgraded to SunOS release 3.5.

Your screen should look like the example shown on the next page.

```
Doing a "make depend"
Making new vmunix, please standby ......


egrep '^#include' ../netinet/in_proto.c ../sys/init_dbx.c ../sys/init_sysent.c
/mcp_proto.c ../sundev/mti_conf.c  ../sundev/pc_conf.c ../sundev/sc_conf.c ../su
ndev/xy_conf.c  ../sun/stubs.c ../sun3/swapgeneric.c   ../conf/param.c | sed \
        -e '/<sys\//d' \
        -e '/<[._a-zA-Z0-9]*>/d' \
        -e 's,:[^"]*<\([^"]*\)>.*,: ../\1,' \
        -e 's/:[^"]*"\([^"]*\)".*/: \1/' \
        -e 's,^../[a-zA-Z0-9]*/\([^\.]*\)\.[cs],\1.o \1.L,' | \
awk ' { if ($1 != prev) { print rec; rec = $0; prev = $1; } \
        else { if (length(rec $3) > 78) { print rec; rec = $0; } \
                else rec = rec " " $3 } } \
      END { print rec } ' > makedep
echo '/^# DO NOT DELETE THIS LINE/+1,$d' >eddep
echo '$r makedep' >>eddep
echo 'w' >>eddep
cp makefile makefile.bak
ex - makefile < eddep
rm eddep makedep
cc -m68020 -fsoft -I. -c -O -Dsun3 -DGENERIC -DSUN3_E -DSUN3_60 -DSUN3_110 -DSUN
3_260 -DSUN3_50 -DSUN3_160 -DIPCSHMEM -DIPCSEMAPHORE -DIPCMESSAGE -DNIT -DNFS -D
QUOTA -DSYSACCT -DINET -I.. -DKERNEL ../sys/init_sysent.c
cc -m68020 -fsoft -I. -c -O -Dsun3 -DGENERIC -DSUN3_E -DSUN3_60 -DSUN3_110 -DSUN
3_260 -DSUN3_50 -DSUN3_160 -DIPCSHMEM -DIPCSEMAPHORE -DIPCMESSAGE -DNIT -DNFS -D
QUOTA -DSYSACCT -DINET -I.. -DKERNEL ../sys/vfs_conf.c
cc -m68020 -fsoft -I. -c -O -Dsun3 -DGENERIC -DSUN3_E -DSUN3_60 -DSUN3_110 -DSUN
3_260 -DSUN3_50 -DSUN3_160 -DIPCSHMEM -DIPCSEMAPHORE -DIPCMESSAGE -DNIT -DNFS -D
QUOTA -DSYSACCT -DINET -I.. -DKERNEL ../sun/conf.c
cc -m68020 -fsoft -I. -c -O -Dsun3 -DGENERIC -DSUN3_E -DSUN3_60 -DSUN3_110 -DSUN
3_260 -DSUN3_50 -DSUN3_160 -DIPCSHMEM -DIPCSEMAPHORE -DIPCMESSAGE -DNIT -DNFS -D
QUOTA -DSYSACCT -DINET -I.. -DKERNEL ../sundev/pc_conf.c
cc -m68020 -fsoft -I. -c -O -Dsun3 -DGENERIC -DSUN3_E -DSUN3_60 -DSUN3_110 -DSUN
3_260 -DSUN3_50 -DSUN3_160 -DIPCSHMEM -DIPCSEMAPHORE -DIPCMESSAGE -DNIT -DNFS -D
QUOTA -DSYSACCT -DINET -I.. -DKERNEL ../sun/stubs.c
```
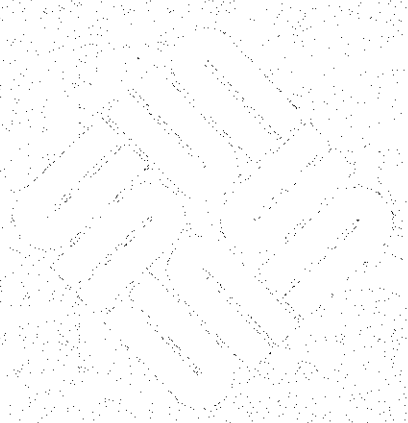
The Workaround

At this point the install script *appears* to be hung. However, if you simply press <**Return**>, the script will continue and will finish successfully.

3

STB SHORT SUBJECTS

3

![line]

STB SHORT SUBJECTS

SunOS 4.0 Signal Handlers

Signal Handler Data Type Changed in SunOS Release 4.0

Functions called when a signal occurs, signal handlers, have historically had the data type pointer to a "function returning 'int'". Now that the 'void' data type has become commonly available in C implementations, the current draft ANSI C language standard and the IEEE POSIX UNIX-type operating system standard both specify that these functions have the data type "function returning 'void'" (i.e. function returning no value).

The 'void' data type is the correct data type for these functions to return since they normally do not return a value. Note that even if you write such a function and have it return a value, that value will not be used. It *cannot* be used, in fact; were the signal mechanism to use it, all code written with signal handlers *not* returning a value would stop working. This would include virtually all code.

SunOS release 4.0 changes the type of these functions to match the draft ANSI and IEEE standards. The include files `sys/signal.h` and `signal.h` now define the function `signal` as returning a pointer to a function returning 'void', and the `sv_handler` member of the `sigvec` structure is such a pointer.

As a result of these changes, programs written with the older signal handler function type may get warning messages when compiled, and will get warnings from `lint`. These warnings are benign; the code will continue to operate correctly. Code from earlier SunOS release levels and from other systems that have not yet changed will work properly.

However, code written in the present and future should use the new signal handler types. Code written to run under SunOS and other systems should use the new ones as well, unless the compiler on those other systems does not accept the 'void' type and cannot process it correctly. Note that the 4.2BSD VAX C compiler does not process it correctly; the 4.3BSD VAX C compiler does.

Finding Pathnames

Finding a Lost File

Many customers find that they know the filename, but cannot remember where it is or how to get there. This is especially common when working with a new directory tree structure, or when taking over for someone else while they're away or on vacation.

You can use the information in this short subject to create an alias that allows you to find the pathname to your lost file by simply typing `locate <lostfile>`, pressing <Return>, and then waiting for the pathname to your lost file to be printed. This alias words with the c-shell only, `csh`, not `ksh` or `sh`.

Your first step is to return to your home directory using the `cd` command. Then edit your `.cshrc` file to include the line shown below.

```
alias locate          'find   -name \!* -print'
```

Now type `source .cshrc` and press <Return>. This step causes your workstation to read commands from your `.cshrc` file to include your new `locate` alias.

Finally, type `locate <lostfile>` and then press <Return>. The pathname to your lost file will now appear, followed by your machine prompt.

For Further Information

Refer to the manual pages on *find(1)* and *csh(1)* for more information on finding files.

4

IN DEPTH

IN DEPTH

Graphics Standards

Graphics Interfaces

This in-depth feature includes an overview to graphics on Sun workstations, a description of the system architecture, and an outline of the software interfaces used among Sun software products.

A Graphics Overview

The major components in graphics on Sun workstations include Sun windows, standard graphics interfaces, low-level interfaces, and graphics hardware.

Sun Windows Overview

At first glance, the most notable feature of a Sun workstation is its sophisticated graphics user-interface. Every Sun system comes with a high resolution bit-mapped screen, an easy-to-use windowing system, and a mouse used to point to items on the screen and to select pop-up menu options. Sun's multi-tasking windowing system allows users to swiftly move from window to window and from application to application.

Sun offers a flexible windowing environment with tools to create icons, to read and send mail, to create and debug programs, to edit text, and so forth.

Graphics Standards Overview

Sun's implementation of each of the standard graphics interfaces (GKS, CGI, and CORE) works within Sun's windows with little or no performance degradation. To achieve both portability and performance in a windowing environment, Sun has tightly integrated the graphics standards with its graphics accelerators and windowing systems.

Low-level Interfaces

When the need for performance outweighs the need for portability across different vendor's systems, Sun offers Pixrect as a direct interface to the Sun frame buffers, and the Graphics Processor Command Interface (GPCI) to Sun's three-dimensional graphics accelerators. Both of these interfaces clear a direct path to Sun's graphics hardware.

Graphics Hardware

With Sun's hardware graphics accelerators at the center of the CXP graphics workstations, Sun delivers the underlying graphics hardware performance needed

for interactive manipulation of three-dimensional shaded surfaces and wireframe models.

With its support of graphics standards, Sun delivers portability among machines in a heterogeneous graphics environment. And finally, with its CXP graphics accelerators, TAAC board, and low-level software interfaces, Sun offers the high performance necessary for interactive three-dimensional graphics applications.

The Graphics System Architecture

Sun delivers portability by offering all of the major industry standards: SunCGI, SunGKS, SunCore, and the emerging PHIGS standard. Refer to the In-Depth feature on page 225 of the February 1988 STB, part number 812-8801-02, for details on the major industry graphics standards.

Each of Sun's workstations meets the stringent graphics demands made by a true bit-mapped, menu-based, and highly interactive windowing system. For special graphics-intensive applications, Sun offers the CXP models. The CXP models each have a graphics accelerator, which at the one end is tuned for 2D applications, and at the other end, provides industry-leading 3D, shaded-surface performance.

CXP Workstations

The CXP graphics workstations, the Sun 3/160CXP, the Sun 3/260CXP, and the Sun 4/260CXP, have been designed for graphics-intensive applications. These graphics workstations draw vectors, flat-shaded polygons, and Gouraud-shaded polygons from both 2D and 3D data. Where these workstations differ from other models is in the mix of graphics and CPU performance. A brief overview of the CXP graphics workstations is shown in figure 1.

Graphics Interfaces

To understand how Sun can achieve performance and portability through windows, one must look at Sun's underlying graphics architecture. Sun's graphics environment is divided into a series of software and hardware layers.

See figure 2 for an illustration of the hardware and software layers comprising the Sun graphics architecture.

	CPU	MIPS	2D Vectors[1]	3D Vectors[2]	Polygons[3]
3/160CXP	68020	2	65K/sec	45K/sec	2K/sec
3/260CXP	68020	4	200K/sec	150K/sec	20K/sec
4/260CXP	SPARC	10	200K/sec	150K/sec	20K/sec

[1] 10 pixels long, clip-tested
[2] 10 pixels long, clip-tested
[3] 100 pixel area, clip-tested, fully-transformed, Gouraud-shaded, z-buffered
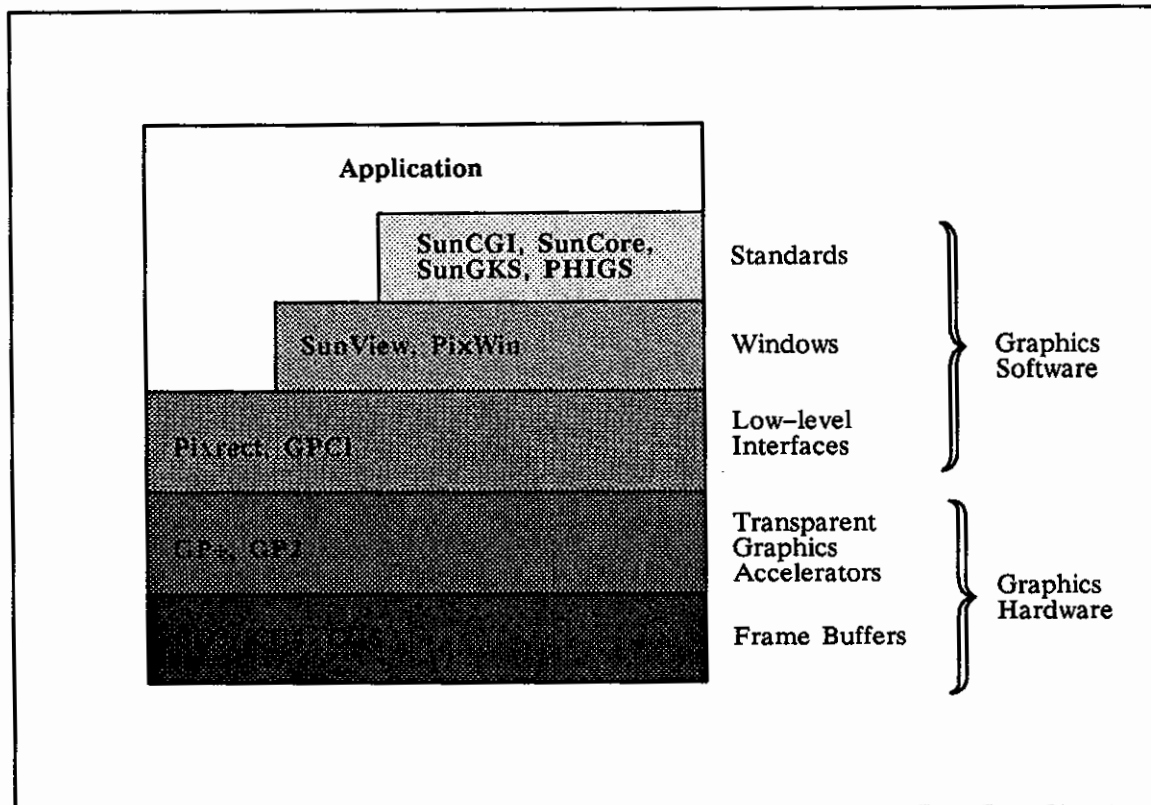
Figure 1: CXP Graphics Workstation Summary

Figure 2: Sun's Graphics Architecture

At the the highest level, an application can use the graphics standards SunCGI, SunGKS, SunCore, and Figaro (an implementation of PHIGS by Template.[3] These standards interface directly to Sun's SunView windowing package. Underneath the windowing software lie Sun's proprietary interfaces to its graphics hardware: Pixrects and GPCI. Pixrect serves as a software interface to Sun's frame buffers, the CG3, the CG4, and the CG5. GPCI is the software interface to the graphics accelerators in the CXP models. From the top down to the hardware, each of these layers meets the needs of different types of applications.

Graphics Standards

The standards serve as general purpose and portable graphics interfaces. This level of interface is best suited for applications that will be ported to numerous machines and for applications where graphics are important and speed may be of peripheral interest; the standards are portable in a heterogeneous computing environment and relieve the application programmer of having to write standard graphics routines.

If portability to other machines is not an issue, or the application has special graphics requirements not addressed by the standards, it is possible to program to the next layer of software, the SunView/Pixwin windowing package.

See figure 3 for an illustration of the four layers of graphics standards available on Sun workstations. Sun standards are compatible across the Sun product line and with other vendors. SunView, Pixwin, and Pixrects are compatible across the Sun product line. Finally, GPCI is compatible across the CXP family of Sun products.

SunView and Pixwin

Applications which use the SunView package can take full advantage of Sun's windowing environment. By programming to the SunView interface, the applications programmer does not have to manage the windowing system. The graphics package within SunView is the Pixwin library. Pixwin supports low-level 2D graphics functions which exist within the windowing environment; Pixwin's primitives are drawn and clipped to a window. Pixwin commands are similar to those found in Pixrect, except that Pixrect primitives act outside of the windowing system.

Pixrect

Applications which manage their own windowing system or need superior graphics performance can interface to the Pixrect library. The Pixrect library lies outside of the windowing environment; Pixrect primitives are the building blocks used to construct the windowing system. Pixrect supports low-level 2D graphics primitives such as area fills, vectors, and polygons.

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[3] Template is a registered trademark of Megatek Corporation, 9645 Scranton Road, San Diego, CA 92121

Sun 3/160CXP Sun 3/260CXP Sun 4/260CXP	Sun 2's Sun 3's Sun 4's	Other Vendors
SunCGI, SunCore, SunGKS, PHIGS		
SunView, PixWin		
Pixrect		
GPCI		
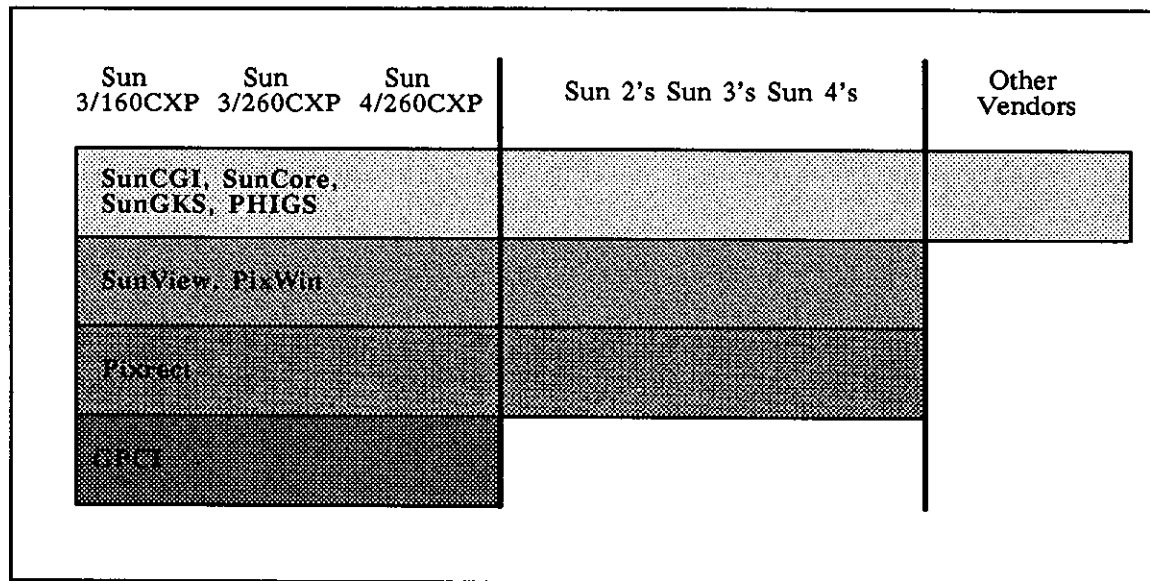
Figure 3: Sun Standards and Compatibility

GPCI

On non-CXP models, the Pixrect library serves as the direct interface to the graphics hardware. On CXP models, there is one layer beneath Pixrects, the Graphics Processor Command Interface (GPCI). GPCI is the lowest-level software interface to Sun's graphics accelerators, the GP+ and the GP2. GPCI delivers the fastest graphics performance.

Performance from Any Interface

Performance usually suffers as the number of software layers increase. Sun has eased this problem by forging a direct link from each software level to the hardware. The highest level software packages do not necessarily go through each software level to get to the hardware; direct calls to the appropriate hardware are made whenever possible. For instance, if an application draws a vector in GKS on a CXP model, the vector command is made directly through GPCI without passing through the SunView or Pixrect software layer.

Portability and Acceleration

In addition to ensuring portability across different vendor's computers by offering graphics standards, Sun maintains its lower-level software to guarantee portability across the Sun product line. Sun provides a stable software platform by being the caretaker of the Pixrect software layer.

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Sun ports Pixrect to each new generation of graphics hardware, so an application written to the Pixrect interface or above (SunView, Pixwins, or the graphics standards) will run on any Sun workstation, including the CXP models. Note that applications written to GPCI will run only on the CXP models.

See figure 4 for an illustration of Sun's control of the middle software layer to give stability to applications when new graphics hardware is introduced. This enhances compatibility across Sun product families.
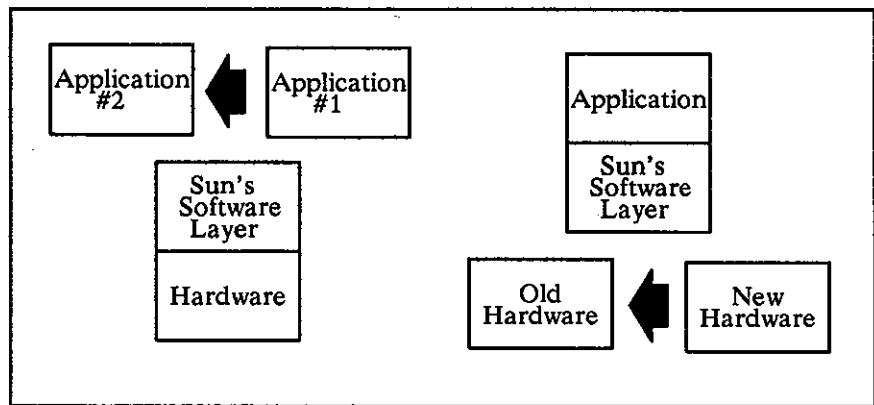
Figure 4: Stability for Applications and Hardware Changes

Each time Sun introduces new graphics hardware, software written to the Pixrect interface always runs automatically since Sun always ports Pixrect to the new hardware. In this way, applications which are written to the Pixrect interface, as well as applications written to the software interfaces above Pixrect, are protected from changes in the underlying hardware.

Conversely, it is simple to unobtrusively introduce new graphics hardware. If you port Pixrects to the new hardware, the windowing system, standards, and applications come along. For those interested in a stable software platform for applications, Sun's low-level software layer serves to shield the application from new hardware. For those interested in installing new graphics hardware, a single port to Sun's software is leveraged into a port to all applications running on Sun workstations.

Sun Software Interfaces

When the need for performance outweighs the need for portability, Sun offers two direct routes to Sun's graphics hardware, the Pixrect (pixel rectangle) library and Graphics Processor Command Interface (GPCI).

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Pixrects

The Pixrect graphics library is Sun's lowest-level software interface found across all of Sun's product line. Pixrect draws areas on the screen, draws lines, and performs raster operations. Any more sophisticated graphics operation must be written in the application.

An application written to the Pixrect interface is guaranteed portability across the Sun product line. Since the Pixrect interface lies directly above the frame buffer, an application written to the Pixrect interface will exhibit high graphics performance. See figure 3.

Imaging Model

The Pixrect imaging model is based on writing lines, characters, and blocks of pixels onto rectangular, logical viewing surfaces. These surfaces are called *pixrects*. As new pixels are written to the screen, logical operations combine the values already shown on the screen with the new values being written.

The process of combining the values is called a raster operation, a *raster op*. Because raster ops are fundamental to the Pixrect imaging model and to bit-mapped screens in general, raster ops are performed in hardware on the Sun 3/160C, Sun 3/260C, and Sun 4/260C, and are optimized in the remaining Sun systems.

Worksurfaces

Pixrects serve as worksurfaces. Unlike the worksurfaces in the standards CGI, Core, GKS, and PHIGS, the worksurfaces in Pixrect are not the same as windows. The Pixrect worksurface is much more basic than its counterparts in the graphics standards; it is simply a surface on which to write geometric primitives.

Groups of pixrects can be organized into a hierarchical structure. The whole drawing surface of the output device serves as the root pixrect. Within this main pixrect, it is possible to define child pixrects so that the origin of the child is defined in the parent's coordinate system. See figure 5 for an illustration of several pixrects and their respective coordinate systems. Since each pixrect has its own local coordinate system, both a pixrect and a location must be specified when the application draws a line, raster pattern, or character.

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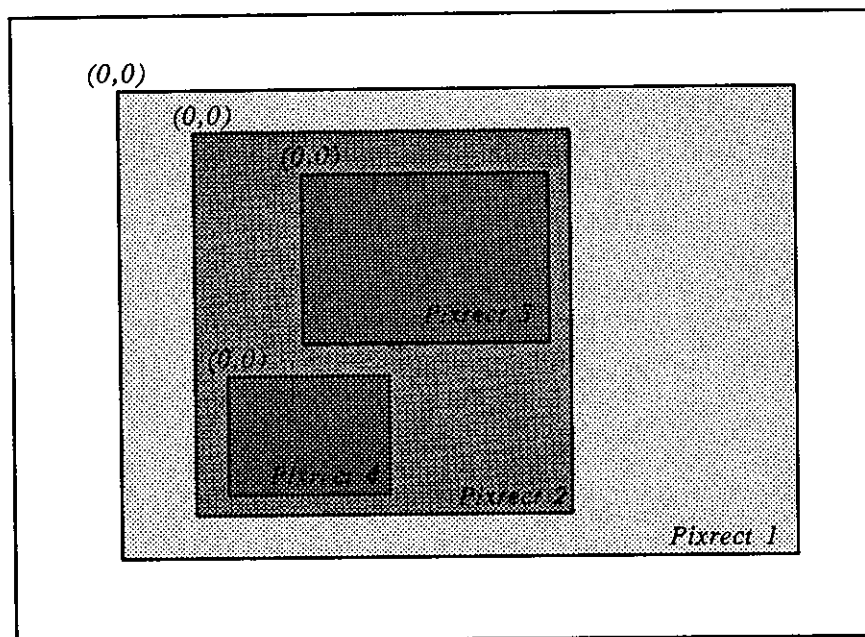
Figure 5: Individual Pixrects and Local Coordinates

Input Model

Pixrect offers no input support; this is done through either Sun's windowing environment, or through calls on the raw input devices.

Coordinates

The coordinates used in the Pixrect library are integer coordinates. Every pixrect has its own local coordinate system; the point *(0,0)* is found in the upper left hand corner of each pixrect.

Clipping and Transforms

Geometric primitives are clipped to the boundaries of the pixrect to which they are being written. Although clipping is on by default, it is possible to turn clipping off by setting the `PIX_DONTCLIP` flag on the *op argument*. The op argument flag is passed to each geometric primitive function.

There are no explicit transformations supported in Pixrect; geometric primitives are written directly to the coordinates of a specified pixrect. The Pixrect library performs the implicit transformation from a pixrect's coordinate system to the coordinates of the output device.

Geometric Primitives and
Raster Functions

RasterOps. Every time a geometric primitive is drawn in a pixrect, it is combined with the destination pixel values by a logical operation. The type of logical operation is specified by an *op flag*. The op flag is passed as a parameter to each function that draws a geometric primitive. In addition to being one of the possible 16 binary operations, the op flag can turn clipping off and on and perform other, more complicated logical operations.

Pixels. Pixrect allows the application to write an individual pixel to a pixrect and retrieve its value. The location of the pixel is specified in the destination pixrect's local coordinates, not the output device's coordinates.

Bit-Blits. The Pixrect library offers a wide variety of bit-blit functions, from simply copying one region of the screen onto another to repeating a small region to fill a larger region. See figure 6 for illustrations of the three ways to bit-blit in Pixrect. At the simplest level as shown in (a), Pixrect allows the application to copy one region of a pixrect to another region of the same or different pixrect. As is the case with the other graphics primitives, a logical operation can be used to combine the source pixel array with the destination array. This raster operation is defined by the `op flag` passed to the function call.

Unless otherwise specified, the source block of pixels will be clipped to the boundaries of the destination pixrect. Additionally, if the destination block of pixels is larger than the source, then the raster operation will be clipped to the source block's dimensions; the source block of pixels will not 'stretch' to fill the dimensions of the destination block.

Another option offered by Pixrects is to replicate the source block of pixels over the dimensions of the destination block of pixels. This feature is useful in creating a patterns similar to a tile floor or an Escher drawing. This is shown in figure 6 (b).

In addition to merely copying blocks of bits from one area of the screen, it is possible pass the source block of pixels through a stencil as it is being drawn to its destination. This process is conceptually similar to spray-painting a pattern through a cardboard stencil. See figure 6 (c).

Loading and Saving Raster Images. Pixrect allows an application to save a raster image to a file and then load the image back into a pixrect. The raster images can either be saved 'as is' or compressed with run-length encoding. For color images, the entries in the colormap are stored along with the pixel values. Pixrect provides additional facilities to read and write parts of the raster such as the file header or the colormap independently.

Vectors. In Pixrect, vectors are drawn by defining the two endpoints, the color, the pixrect that it will drawn on, and the raster op used to draw the vector. Unless the `PIX_DONTCLIP` option has been specified in the raster op argument, the vector will be clipped to the boundaries of the pixrect.

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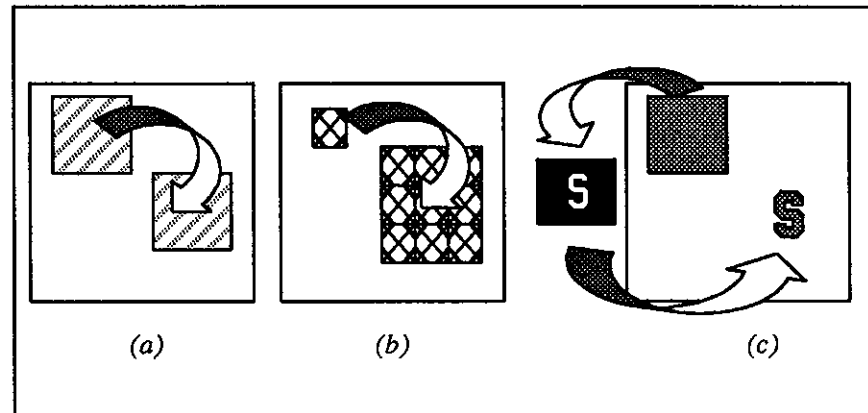
Figure 6: Three Ways to Bit-Blit in Pixrect

Polygons. See figure 7 which shows three polygon examples. Pixrect processes the general case for polygons, figure 7 (a); polygons can have interior holes, figure 7 (b); can be convex or concave without holes, figure 7 (c); and can be filled with a solid color, a texture, or an image.

Text. Pixrect has the facilities necessary to define a font, to define the properties of text, and to draw strings within pixrects. Each character within a font is defined as a pixrect with parameters defining the character's baseline, the character's origin (used for kerning or proportional spacing), and the character advance which specifies where on the screen the following character in a string will begin.

To draw a string of text in a pixrect, the application specifies the location of the the beginning point of the text, the font, the op flag, and the text to be written. In addition to simply writing text to a pixrect, it is possible to write transparent text. With transparent text, the interiors of a character act as though they were transparent. Only the solid areas of the character are drawn onto the screen.

Colors. Colors in Pixrect are represented by indices into a color map with either two entries (monochrome) or any power of 2 from 2 to 256 number of entries (color). Pixrect allows the application explicitly to manipulate the values stored in the color map. Pixrect provides a special command to create inverse video.
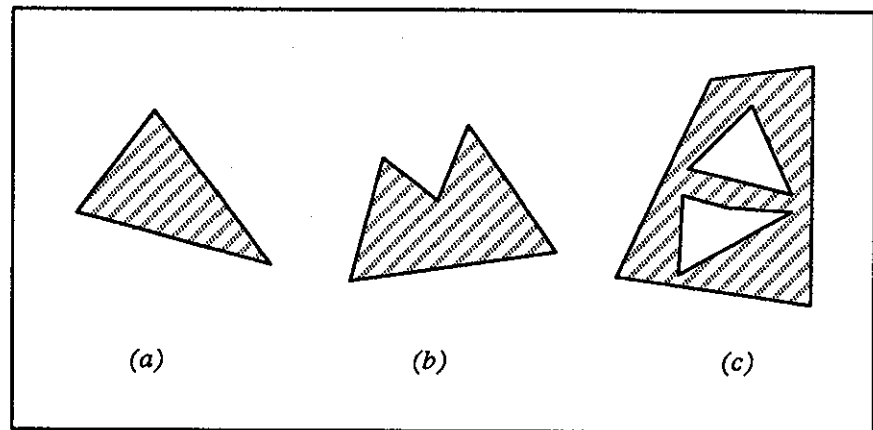
Figure 7: Polygon Examples Using the Pixrect Library

Graphics Processor Command Interface (GPCI)

The Graphics Processor (GP) provides commands for drawing vectors, for drawing polygons, for drawing rectangular area fills, and 'bit-blits' within the frame buffer. Other operations, such as drawing raster text or copying images from main memory to the screen must be done by the CPU (i.e. in software).

The GPCI is the software interface for Sun's Graphics Processors (GP, GP+, and GP2). The GPs appear as a block of shared memory in the VME address space. The block is divided as defined in the command interface, with reserved areas for commands and parameters, and a protocol that allows the CPU to detect when the GP has finished accessing the Sun 'color board' (i.e. `cgtwo`).

Programming at the command interface level achieves the richest application functionality and the highest performance possible from the GP. Very efficient programs are possible with GPCI. Command interface programs can be written to run on the raw screen or in a window under SunView.

Primitives are read out of an attribute list and placed into the GP buffer. These primitives are then transformed and clipped to the current viewing window. Finally, the appropriate screen pixels are painted. These steps are performed by various parts of the GP and workstation.

The following discussion applies to the GP+ with respect to memory size and block size.

Software command interface programs communicate with the GP through a 32 Kbyte area of high-speed shared memory which both the CPU and GP can read and write. The memory is divided into 32, 1-Kbyte blocks. The first block is used to hold control information which is used to coordinate command

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processing between CPU and GP. The next 23 blocks can be dynamically allocated to processes that send graphics commands to the GP. The last eight blocks are used to hold static data such as graphics attributes (graphics context information, for example, m attributes, and the clipping list which a process can set expediting the information to remain constant over a period of time).

The programmer opens the GP with the pixrect routine `pr_open` if the program uses any of the GP commands which depend on graphics context information stored on the GP. The programmer also requests the kernel to reserve one or more static data blocks to hold graphics context information. One can also send commands to the GP by writing them into one of the command blocks through the following steps shown below.

□ allocate one or more command blocks by calling the gp1 allocation routine

□ write a list of GP commands into the block, terminating the list with the special `GP1_EOCL` command to indicate the end of the command list

□ give the GP the shared memory address of the beginning of the command list with `gp1_post`, entering the list into a queue for execution by the GP

□ at the end of the last command list in the blocks, provide the optional free block which returned to the pool of command blocks available to `gp1_alloc`. This should be done when there are no more commands to be sent or the blocks are full.

The Coordinate System

For systems having a GB, the z values range from 0 to $2**16 -1$, (which includes 16 bits of z for 3D screen coordinates). For 2D or 3D coordinates either 24-bit integer or 32-bit floating point coordinates are used, respectively. The integer coordinates are converted to floating point by the GP for subsequent processing. In an application, the world coordinate system can be either right-handed or left-handed, as defined by the user.

Coordinates can be expressed in integer or floating point world coordinates. The programmer chooses the world coordinate space in which primitives drawn by the GP context commands are specified.

The GP allows 2D or 3D and either 24-bit integer or 32-bit floating point coordinates. Integer coordinates are converted to floating point by the GP for subsequent processing.

Screen coordinates origin is the upper left corner of the screen.

The Imaging Model

Since GPCI speaks directly to the Graphics Accelerator, the imaging model reflects the underlying hardware. Primitives are transformed into normalized space and are clipped to boundaries corresponding to world coordinate clipping planes (view clipping). The primitives are scaled to screen coordinates (viewport scaling).

The screen coordinate primitives are clipped to the boundaries specified by screen-coordinate clipping list (screen clipping). For 3D applications with the optional graphics buffer board, each pixel in a 3D polygon is checked to see if it is visible using a depth buffer hidden surface technique. The primitives are then drawn on the screen.

Clipping and Transformations

The current transformation is expressed as a 4X4 3D or 3X2 2D matrix. Scaling, rotation, translation, and clipping are done for both 3D and 2D.

You can store up to six transformation matrices in a graphics context. The GP has commands that set matrices, multiply one matrix by another, and retrieve matrices from the GP. Matrices are always specified and stored in floating point coordinates but may be either 2D or 3D.

You select one of the six matrices in the graphics context as the current transformation matrix. Subsequent primitives are transformed by the matrix you choose before view clipping and the rest of the graphics pipeline. The transformation must perform the program's modeling and viewing operations as well as a normalization step. The primitives are transformed from world coordinates into the normalized coordinate space.

The GP clips 2D primitives such that $-1.0 <= x,y <= 1.0$. The clipping planes can be enabled and disabled.

The 3D clipping includes hither, yon, up, and sides. The programmer must specify the transformation matrix in such a way that the desired world coordinate clipping limits are transformed to the fixed normalized coordinate clipping limits.

5

QUESTIONS, ANSWERS, HINTS, AND TIPS

QUESTIONS, ANSWERS, HINTS, AND TIPS

Q&A, and Tip of the Month

Hints & Tips #11

This is the eleventh in a continuing series of this column which I have created for two purposes.[4] 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 2-312, 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!

Swap Space on Large Memory Systems

How much physical memory do you have on your system? How much swap space is allocated to service it? Do you have enough swap space?

As Sun workstations get faster and more powerful, more and more memory is being installed on systems to process the increased speed. Where four megabyte used to be a lot of memory, it is rapidly becoming a minimal size, and 16 and 32 megabyte systems are more and more common.

One of the undocumented features of a large memory system, however, is that there has to be enough swap space allocated to support the memory. This is not a

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[4] This continuing column is submitted by Chuq Von Rospach, Customer Software Services.

problem with a four megabyte system since the SunOS default swap partition is 16 megabytes. But, if you put 32 megabytes into a system with 16 megabytes of swap space on a machine running SunOS release 2.x or 3.x, only 16 megabytes of memory will be used.

This silent truncation of memory can cause all sorts of anomalous behavior; unusually slow benchmarks, high paging rates, and the like. This behavior is nothing fatal, but the system does not seem to operate as it should.

The Solution: Enlarging Your Swap Space

What to do? Simply put, use a large swap space. This involves reinstalling your SunOS and using `setup` to either increase the size of the `b` partition on disk 0, or add a second swap partition on another disk.

To add a second swap partition, you need to do two things. First, reconfigure your kernel to support two swap spaces by changing the config line in your kernel configuration file to read as shown below. Note that this example assumes the Xylogics controller. The same operations may be done on a SCSI disk by using `sd` instead of `xy`.

```
config      vmunix      root on xy0 swap on xy0 and xy1
```

You then need to change `/etc/fstab` so the system knows to use the swap partition by adding the line appearing below.

```
/dev/xy1b    0    swap    0 0 0
```

Change the device name to whatever you used for the second swap partition. The mount point is ignored but a placeholder must be included to maintain correct field processing. After this, make sure that the `/etc/swapon` command is not commented out in `/etc/rc` and reboot. If everything is set up properly, the `swapon` command will report that it is adding `/dev/xy1b` as a swap partition. If it does not, recheck the changes you made.

You can verify that the swap space is active with the `pstat` command. Typing `pstat -s` will give you a report similar to the below example.

```
18104k used (6376k text), 82358k free, 3968k wasted, 0k missing
max process allocable = 65520k
avail: 17*4096k 4*2048k 2*1024k 1*512k 1*256k 4*128k 6*64k 14*32k 8*16k 246*1k
```

The sum of *used* and *free* above should be approximately the total size of your swap space.

Swap Space Summary

What is the tradeoff between one large swap space and multiple smaller ones? Multiple smaller partitions may improve system performance by spreading the swap load across multiple disks, reducing contention. It also allows you to have more swap space when smaller disks are in use.

The problem with multiple partitions involves kernel crash dumps. If there is not enough room in the primary swap partition, kernel dumps after a panic will be disabled and `savecore` will not do anything. The amount of swap space needed to support a crash dump is the amount of physical memory plus a couple of megabytes to allow the system to boot far enough to save it to disk. On a 16 megabyte system, the primary swap space should be at least 18-20 megabytes. On a 32 megabyte system, at least 34.

If you do not need kernel crash dumps this does not matter, but if you are writing device drivers or doing any kind of development where looking at a crash postmortem is necessary, you should keep this in mind when installing your system.

For Further Information

Refer to the manual pages for *fstab(5)* (which shares the *mntent(5)* manual page), *swapon(8)*, and *pstat(8)* for further information on swap partitions.

Tip of the Month

This month's tip shows you how to build a general purpose execute filter for SunView text subwindows. This lets you select a lot of text whose first line is a shell command, and the rest of the lines (if any) are taken as input to that shell command. The results of the command are appended to (or replace) the selected text.

When you select some text and press R3, the filter tests the first word in the first line to see if it is a file either on `$HOME/forms` or on the `cwd`. If so, the contents of that file are placed into the `textsw`. Otherwise, `exec.filter` executes the first line to process the rest.

A typical use is in a mail composition window; you can type the name of a standard form at the front, quad-click and adjust to select the 'whole window pending delete', and use `exec.filter` to 'load' the form into the window.

To set this up, add the following lines in your `.textswrc` file as shown below. Note that you will need to modify the path name to fit your environment.

```
KEY_RIGHT(3)     FILTER
/usr/plaid/chuq/bin/exec.filter
```

And set up the shell script `exec.filter` as appearing on the next page.

```
#! /bin/csh -f
echo $< | awk '{print "#! /bin/csh -f"\
  print "set nonomatch"\
  print "if (-r $HOME/forms/" $1 ") then"\
  print "cat $HOME/forms/" $1\
  print "else if (-r " $1 ") then"\
  print "cat " $1\
  print "else"\
  print $0\
  print "endif"}' >> /tmp/exec.$$
chmod u+x /tmp/exec.$$
/tmp/exec.$$
rm -f /tmp/exec.$$
```

The next time you start suntools, the filter will be in place.

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THE HACKERS' CORNER

THE HACKERS' CORNER

Backup Copy Daemon

Manual Pages in `textedit`
Windows

This month's **Hackers' Corner** contains shar files that include a pager script, an rmul (remove underlining) script, and an icon.

Please consult your local shell script or programming expert regarding any script or code problems. The example programs are not offered as a supported Sun product, but as items of interest to enthusiasts wanting to try out something for themselves. Note that **Hackers' Corner** code may not work in all cases, and may not be compatible with future SunOS releases.

Using Manual Pages in a
`textedit` **Window**

You may find it inconvenient and time consuming to continue thumbing through manuals, using `nroff` to print manual pages, and using the `man` command repeatedly to look up the same information because it has scrolled out of view.

The shar files in this month's **Hackers' Corner** give you a way to get the `man` pages loaded quickly into a `textedit` window using SunView. This file is complete with a labeled icon so you can close it and then refer back to it easily.

You have to do a bit of work to set it up, but then it is fast and easy to use. Its should be compatible with normal usage, so you can do it even if you serve `man` pages to tty-based users as well.

Setting Up the Pager Script

Use the procedure shown below to set up the pager script to display manual pages in a textedit window.

1. Log in as yourself as normal user and create the three files described below.

```
bin/rmul
```
the script used to remove underlines from the compiled man pages

```
bin/pager
```
the script used by *man(1)* to display the compiled man pages in the man page window

```
images/miniman.icon
```
the icon to be associated with the man page window

2. Log in as `root`, or use *su(1)* to obtain root permissions. Please note that if your man pages are mounted via NFS, you will need to ask your system administrator for help with this entire procedure.

3. Compile the manual pages using the *catman(1)* command shown below.

```
machine# catman 12345678
machine#
```

4. While still logged in as `root`, run the `rmul` script supplied later in this article. Use the command shown below to run the script. This needs to be done since `textedit` windows cannot process underlining. Substitute your user name for 'user' in the below command.

```
machine# sh  user/bin/rmul
machine#
```

The script prints a hash sign (#) for each file it examines, so your screen will look something like that shown below.

```
machine# sh  user/bin/rmul
cat1
#####################################################################
#####################################################################
#########################
cat2
#####################################################################
##################
cat3
#####################################################################
#####################################################################
################################################
cat4
etc ... etc ... etc ...
cat8
#####################################################################
##########
machine#
```

5. Log in as your normal user, and edit the `.cshrc` file in your home directory to include the line shown below.

```
setenv  PAGER    /bin/pager
```

6. Log out and then log in again so that the new variable is set. Now when you wish to look up a command, use the normal *man(1)* command as shown in the example below. Note that this example displays the man page for the listing, `ls` command.

```
machine% man ls
machine%
```

If a man page is found, the command will not produce output in the current `shelltool` window, but will start a new `textedit` window instead.

Note that other uses of `man` using the `-k` option, for example, appear in the current `shelltool` window as before.

The `rmul` Script

The `rmul` script used to remove the underlining from the compiled manual pages appears below. You must be `root` to run this script after you have used *catman(1)*.

```sh
#!/bin/sh
#
# rmul : strip all underscores from compiled man pages
#
# must be run as root, after catman has been run
#
cd /usr/man
for DIR in `ls -d cat*`
do
    echo $DIR
    cd $DIR
    for FIL in `ls`
    do
        ul -tdumb $FIL > tmp.ul
        mv tmp.ul $FIL
        echo -n '#'
    done
    cd ..
    echo
done
```

The `pager` Script

The `pager` script is shown below. This is called by *man(1)* to display the output in a `textedit` window. Ensure that `ICON` is set to the file containing the miniman icon.

```
#!/bin/sh
#
# pager : called by man(1) to display output in a window
#
# ensure ICON is set to the file containing miniman icon
#
ICON=$HOME/images/miniman.icon
#
textedit -WI $ICON -WL `expr $1 : '.*/\(.*\)\..*'` -Es 0 -Er on $1 &
```

The Icon File   Use the information shown below to create the icon used when you close the man
                                       page window.

```
/* Format_version=1, Width=64, Height=64, Depth=1, Valid_bits_per_item=16
 */
    0x8FFF,0xFFFF,0xFFFF,0xC888,0x8C00,0x0000,0x0000,0x4888,
    0x2FFF,0xFFFF,0xFFFF,0xF222,0x2B00,0x0000,0x0000,0x1222,
    0x89FF,0xFFFF,0xFFFF,0xFC88,0x88C0,0x0000,0x0000,0x0488,
    0x287F,0xFFFF,0xFFFF,0xFF22,0x2820,0x0000,0x0000,0x0122,
    0x8820,0x0000,0x0000,0x0188,0x8820,0x0000,0x0000,0x0188,
    0x2820,0x0000,0x0000,0x0122,0x2824,0x2000,0x0000,0x3922,
    0x8824,0x2000,0x0000,0x0988,0x8826,0x638B,0x111C,0x0988,
    0x2826,0x644C,0x9122,0x0922,0x2825,0xA048,0x9102,0x0922,
    0x8825,0xA3C8,0x911E,0x0988,0x8824,0x2448,0x9122,0x0988,
    0x2824,0x2448,0x9322,0x0922,0x2824,0x23C8,0x8D1E,0x0922,
    0x8820,0x0000,0x0000,0x0188,0x8820,0x0000,0x0000,0x0188,
    0x2820,0x0000,0x0000,0x0122,0x2820,0x0000,0x0000,0x0122,
    0x8820,0x0000,0x0000,0x0188,0x8820,0x7800,0x0000,0x0188,
    0x2820,0x4400,0x0000,0x0122,0x2820,0x4470,0xD1C3,0x8122,
    0x8820,0x4489,0x3224,0x4188,0x8820,0x7809,0x1224,0x0188,
    0x2820,0x4079,0x13E3,0x8122,0x2820,0x4089,0x1200,0x4122,
    0x8820,0x4089,0x3224,0x4188,0x8820,0x4078,0xD1C3,0x8188,
    0x2820,0x0000,0x1000,0x0122,0x2820,0x0001,0x1000,0x0122,
    0x8820,0x0000,0xE000,0x0188,0x8820,0x0000,0x0000,0x0188,
    0x2820,0x0000,0x0000,0x0122,0x2820,0x0000,0x0000,0x0122,
    0x8820,0x0000,0x0000,0x0188,0x8820,0x0000,0x0000,0x0188,
    0x2820,0x0000,0x0000,0x0122,0x2820,0x0000,0x0000,0x0122,
    0x8820,0x0000,0x0000,0x0188,0x8820,0x0000,0x0000,0x0188,
    0x2820,0x0000,0x0000,0x0122,0x2820,0x0000,0x0000,0x0122,
    0x8820,0x0000,0x0000,0x0188,0x8820,0x0000,0x0000,0x0188,
    0x2820,0x0000,0x0000,0x0122,0x2820,0x0000,0x0000,0x0122,
    0x8820,0x0000,0x0000,0x0188,0x8C20,0x0000,0x0000,0x0188,
    0x2620,0x0000,0x0000,0x0122,0x2320,0x0000,0x0000,0x0122,
    0x89A0,0x0000,0x0000,0x0188,0x88E0,0x0000,0x0000,0x0188,
    0x2260,0x0000,0x0000,0x0122,0x223F,0xFFFF,0xFFFF,0xFF22
```

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CUSTOMER DISTRIBUTED BUGSLIST

7

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CUSTOMER DISTRIBUTED
BUGSLIST

Introduction

```




```

Organization

The Customer Distributed BugsList (CDB) is divided into two sections: open bugs in the Sun Operating System (SunOS), and open bugs in other Sun software products. Both sections are sorted first by topic, then by subtopic.

Individual Entries

Each entry in the CDB includes the bug Reference Number, a one-line synopsis, the release(s) in which the bug has been reported, a brief description, and a work around, when available. The Reference Number serves as an identification tag for the bug. Refer to this number when making an inquiry on a specific bug.

The entries were extracted from our database on January 8, 1988. The CDB includes SunOS 3.5 and earlier releases. Some releases include alpha, beta, and pilot phases. Entries that include alpha, beta, and pilot releases indicate bugs that are still open at the time of first customer ship of the release. Refer to the table titled 'Current Sun Products and Release Levels' included in Section 1, 'Notes and Comments,' for further information about current releases.

All bugs included in the CDB have been evaluated by Sun's Engineering staff. Some bugs have been eliminated based on the following criteria:

1. The entry is not considered to be a bug; rather, it is an in-house request for enhancement.

2. The bug refers to an in-house situation only.

New CDB Category

This issue includes SunTrac, Sun's graphics-based project management tracking system, as a new CDB category. For further information on SunTrac, refer to the article entitled 'SunTrac Release 1.0' in the December, 1987 issue of the *Software Technical Bulletin.*

Compilers

SunOS

Compilers

Assembler

Reference Number: 1003562
Synopsis: Missing Diagnostic - table overflow for switch statements

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: 3.2, 3.3, 3.4

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:

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

system% /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: 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, 3.2

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, as in the following example:

```
typedef double array[5];

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

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 is ignored
by 'sbrk' when the program is compiled with the '-pg' option.

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```
system% 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));
}
system% make
cc tst.c -o tst1
cc -pg tst.c -o tst2
system% tst1
22e04
0
100000
100000
150000
system% tst2
2bdd0
0
2ddd0
2ddd0
7ddd0
system%
```

Reference Number: 1004282
Synopsis: C compiler does not compile the source statements properly.
Release: 3.2

Description:
>The Release 3.2 C compiler exhibits two problems when compiling
>the sample program below. One line should be compiled,
>but does not. The other line should not be compiled,
>because the address cannot be taken out of an expression.

```
struct a { int b; } c, d( );

main( )
{

/* this line should be compiled, but doesn't */
(c = d( )) .b;

/* this line should not be compiled - you can't take the address of
   an expression */
   (&(c = d( ))) ->b;
}
```

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: 1005006
Synopsis: C Compiler catching signals when it shouldn't
Release: 3.2

Description:
The C compiler sets up signal handling when started up in background
mode from a shell script. For example, the customer uses
a Bourne shell script that catches signals 1, 2, and 3
to compile a C program in background mode. After the program
compiles, the compiler echoes its return code ('$?').
If the customer runs the script to completion, the compiler
echoes a zero. However, if the customer hits control-C (^C),
the compiler echoes '1' showing a failure to complete the
compilation even though an 'abort' should not effect a compilation
run in background mode.

Reference Number: 1005870
Synopsis: cc -a chokes on some typedefs
Release: 3.4

Description:
When using 'cc -a' to invoke the '/usr/lib/bb_count' preprocessor,
'cc -a' gets confused by typedef lines that define more than one type.
For example:

```
typedef struct foo {
        int a;
        int b;
} *foo, foo_rec;
```

With this typedef, only the second one ('foo_rec') is recognized by
'bb_count'. Thus, when the first one ('foo') is used later in
the code, 'bb_count' gets confused, and can result in compilation
errors.
Work around:
Use one typedef per typedef statement.

Reference Number: 1006298
Synopsis: compiler error: no table entry for op REG
Release: 3.4

Description:
In the following code, the C compiler attempts to use 'd2' to
evaluate an expression, but the attempt fails, since 'd2' is in use
as a register variable.

```
typedef unsigned long u_long;

foo( )
{
        register u_long *d, t, k, *m;
        register u_long d1, d2, d3, d4;

        t = t &   (u_long) m | (u_long) m &  k;
}
```

When compiled, the following error message appears:

compiler error: no table entry for op REG

Work around:
        Do not put 'm' in an address register; or free up one data register.

Debuggers

Reference Number: 1001698
Synopsis: dbx gets stack underflow when setting a float in certain cases
Release: 1.1

Description:
        In the following program:

```
main( )
{
        float f;
}
```

the following causes a 'dbx' stack underflow:

```
(dbx) set f = .78125
(dbx) print f
```

It works if 'f' is set to 0.78125.

Reference Number: 1001702
Release: 3.2

Description:
        After stopping at a breakpoint in dbxtool, the user uses 'up'
        one or more times, selects a line, and attempts to set a
        breakpoint using the 'stop at' button. The 'expand' feature
        for this button generates the following:

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

This causes dbx to give the following error message:

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

When the user continues to step through the current subroutine,
and upon returning to the function in which the user wished
to breakpoint (that is, the same level at which 'up' previously
positioned the user), the 'stop at' button then generated
the following:

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

dbxtool then set the breakpoint.
Work around:
    Retype the line dbxtool printed as the expansion without the './'
    in front of 'filename.c'.

    For example, if dbxtool prints out as follows:

    (dbxtool) stop at "./../src/gp1_prims.c":80
    file "./../src/gp1_prims.c" was not compiled with the "-g" option
    (dbxtool)Retype the line as follows:

    (dbxtool) stop at "../src/gp1_prims.c":80

Reference Number: 1002626
Synopsis: dbx running under dbxtool dies on a "print" command.
Release: 3.2pilot

Description:
    'dbx' running under dbxtool dies on the following 'print'
    command:

    print ($fp   8)

    The following error message is printed when the process
    is killed:

    dbx: internal error: reference through nil pointer at line 134 in file
        languages.c

Reference Number: 1003253
Synopsis: dbx does not handle f77 dummy dimensions correctly
Release: 3.0, 3.2

Description:
  'dbx' does not handle Fortran dummy arrays properly.
  When the array subscripts are printed out, incorrect
  information appears, as shown in the code on the next page.

```
% cat f.f
      dimension a(5), b(5,2)
      do 5 i = 1, 5
      a(i) = float(i)
      b(i,1) = float(i)
      b(i,2) = 2*float(i)
5     continue
      call sub1(b(1,1),5)
      call sub2(b)
      stop
      end
      subroutine sub1(x,n)
      dimension x(n)
      do 10 i = 1, n
      x(i) = 3*float(i)
10    continue
      return
      end
      subroutine sub2(c)
      dimension c(5,2)
      do 10 i = 1, 5
      c(i,1) = -c(i,1)
      c(i,2) = -c(i,2)
10    continue
      return
      end
% f77 -g f.f
f.f:
 MAIN:
      sub1:
      sub2:
% dbx a.out
Reading symbolic information...
Read 357 symbols
(dbx) stop in sub1
(1) stop in sub1
(dbx) run
Running: a.out
stopped in sub1 at line 13 in file "f.f"
   13        do 10 i = 1, n
(dbx) whatis x
 (dummy argument) real  x[1:251657116]
(dbx) print n
*n = 5
(dbx) q
```

Reference Number: 1004116
Synopsis: Cannot dbx 3.2 kernel
Release: 3.2

Description:
If 'dbx' is run on the current kernel, the following
error message appears:

dbx:fatal error: no such device

If 'dbx' is run on a Release 3.0 kernel, no problems
occur.
Work around:
Use 'adb' instead of 'dbx'.

Reference Number: 1004125
Synopsis: dbx -k is broken.
Release: 3.2

Description:
'dbx -k /vmunix' fails with 'ENODEV' when trying to set
'FIOCLEX' (exclusive access) on '/dev/mem'.
Work around:
Change the 'ioctl' entry in 'cdefsw' (in 'conf.c') to
'nulldev' instead of 'nodev'.

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".

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

The result should be "abcdo" rather than "badco".
Work around:
> Use Hex.

Reference Number: 1004649
Synopsis: "dbx" doesn't support explicit references to globals
Release: 3.4

Description:
> By default, variable names used in 'dbx' refer to the object
> in the current scope with that name. Qualifiers can be used
> to get at other objects with the same name. However, a
> qualifier cannot be used to get at a variable with that
> name if it has global scope. 'which' reports variables of that
> sort as "'<variable>"; however, they cannot be referred to as
> "'<variable>".

Reference Number: 1005217
Synopsis: dbx prints wrong values for FORTRAN CHARACTER*1 arrays
Release: 3.2, 3.4

Description:
When 'dbx' calculates the size of array elements for
fortran 'character*1' arrays, the 'size( )' function
miscalculates by one, as shown in the following code:

```
-----t.f------
      character*1 a(8)
      a(1) = 'a'
      a(2) = 'b'
      a(3) = 'c'
      end
--------------
host>> f77 -g t.f
t.f:
 MAIN:
host>> dbx a.out
Reading symbolic information...
Read 299 symbols
(dbx) stop in MAIN
(1) stop in MAIN
(dbx) run
stopped in MAIN at line 2 in file "t.f"
    2        a(1) = 'a'
(dbx) step
stopped in MAIN at line 3 in file "t.f"
    3        a(2) = 'b'
(dbx) step
stopped in MAIN at line 4 in file "t.f"
    4        a(3) = 'c'
(dbx) step
stopped in MAIN at line 5 in file "t.f"
    5        end
(dbx) print a
a = [1] "ab"
[2]    "c"
[3]    ""
[4]    ""
[5]    ""
[6]    ""
[7]    ""
[8]    ""

(dbx)
```

Reference Number: 1005294
Synopsis: problem with dbx(tool) handles source longer than 32767 lines
Release: 3.2

Description:
    If a source file used by 'dbx' or 'dbxtool' exceeds 32767 lines,
    all subsequent lines cannot be reached by using 'step' or 'stop'.

Reference Number: 1005463
Synopsis: adb byte-reverses quoted constants
Release: 3.4

Description:
    'adb' swaps bytes in quoted argument strings, as in
    the following code:

```
adb
'01'=x
            3130
'0123'=X
            31303332
```

Reference Number: 1005495
Synopsis: Problem with dbxtool [multiple-character constants]
Release: 3.2

Description:
    'dbxtool' does not seem to understand multiple-character constants,
    such as in the following example:

```
set buffer[3] = '\0'
```

Reference Number: 1005849
Synopsis: dbxtool -Wi causes zero divide trap
Release: 3.2

Description:
    When bringing up 'dbxtool' using the iconic command 'dbxtool -Wi',
    a divide-by-zero trap results, and the following error message appears:

    Illegal instruction

Reference Number: 1006040
Synopsis: dbx gets confused on programs compiled with -lsuntools
Release: 3.4

Description:
    'dbx' does not print the value of a global variable
    named 'frame' in a program compiled with '-lsuntool'.
Work around:
    Use 'adb' instead of 'dbx'.

Reference Number: 1006128
Synopsis: dbx: tracing f77 integer arrays causes dbx to abort
Release: 3.4

Description:
    When tracing large integer arrays in Fortran programs, 'dbx'
    aborts with a segmentation violation, as is shown when the
    following code is compiled with the '-g' option:

```
dbxfail.f-------------------------------------------------
    PROGRAM TEST
    DIMENSION II(1000)
    DO 2 I=1,1000
  2 II(I)=I
    END
dbxfail.f-------------------------------------------------
```

    Start dbx on it as follows:

```
        % dbx dbxfail
        (dbx) trace ii
        (1) trace ii
        (dbx) run
        Running: dbxfail
        Segmentation fault (core dumped)
```

Reference Number: 1006256
Synopsis: Dbx fails to restore terminal modes for SYSV style oictls
Release: 3.2, 3.3, 3.4

Description:
    'dbx' fails to properly restore terminal modes if the debugged
    program changes them, using UNIX System V 'termio' calls.

Reference Number: 1006257
Synopsis: dbx gives fatal error if asked to debug code with fcntls
Release: 3.2, 3.3, 3.4

Description:
    'dbx' does not properly save and restore 'fcntl' flags.
    If the debugged program sets the flags, 'dbx' does not
    function properly, and returns the following error
    message:

        fatal error: Operation would block

Reference Number: 1006385
Synopsis: dbx seems to be not handling packed bit fields correctly.
Release: 3.4

Description:
    A problem occurs with calculation of an offset by
    'dbx' when assigning a value to C bitfields.

Reference Number: 1006452
Synopsis: dbxtool foredumps when exception occurs in non-used file
Release: 3.2

Description:
    'dbxtool' core dumps when an exception occurs in a file.
    The file is in a library in another directory which has
    not been pointed to by the 'use' command. The main program
    is in the directory the user is in, and the user has a
    file with the same name as the 'exception_file' in that
    directory.
Work around:
    Remove the spurious file in the 'debug' directory.

Reference Number: 1006461
Synopsis: common variable declared in a block data is messed by dbx.
Release: 3.2

Description:
    Common variables declared in a 'BLOCK DATA' module are
    considered to be a part of the subprogram immediately
    preceding the BLOCK DATA module by 'dbx'.

Reference Number: 1006477
Synopsis: dbx can not print individual array items in structures
Release: fortran1.0

Description:
>The version of 'dbx' shipped with Fortran1.0 has problems
>accessing individual array elements if the array is part
>of a structure. Note that this only applies to SunFortran.

Work around:
>Ask 'dbx' for the whole array, rather than one element of
>the array.

Reference Number: 1006569
Synopsis: dbx prints wrong values for odd-length char strings
Release: fortran1.0beta

Description:
>If character strings are odd length, 'dbx' does not print
>the correct values, but a 'print' statement in the program
>itself prints out the correct value.

Work around:
>Ask 'dbx' for the whole array, rather than one element of
>the array.

Reference Number: 1007002
Synopsis: dbx only allows 100 arguments to the run command
Release: 3.5

Description:
>The 'run' command in 'dbx' takes a maximum of 100 arguments.
>Thus, if a program fails when given 110 arguments, 'dbx'
>cannot be used for debugging.

Reference Number: 1007496
Synopsis: dbx "call" fails to understand FORTRAN dynamic array bounds
Release: 3.4

Description:
>The 'call' command of 'dbx' fails to understand FORTRAN dynamic
>arraybounds, as shown in the following code:

```
system>> more t.f
      real a
      integer m
      dimension a(10,10)
      m = 10
      call sub1(a,m)
      end

      subroutine sub1(a,m)
      dimension a(m,1)
      write(6,*) 'hello'
      return
      end
system>> f771.0 -g t.f
t.f:
 MAIN:
      sub1:
system>> dbx a.out
Reading symbolic information...
Read 581 symbols
(dbx) stop in MAIN
(1) stop in MAIN
(dbx) run
Running: a.out
stopped in MAIN at line 4 in file "t.f"
    4       m = 10
(dbx) step
stopped in MAIN at line 5 in file "t.f"
    5       call sub1(a,m)
(dbx) call sub1(a,m)
Could not find dynamic bounds
(dbx) quit
system>>
```

If you put a 'wrapper' around sub1, the code works, as shown below.

```
real a
integer m
dimension a(10,10)
m = 10
call sub2( )
end

subroutine sub1(a,m)
dimension a(m,1)
write(6,*) 'hello'
return
end

subroutine sub2( )
call sub1(a,10)
return
end
system>> f771.0 -g t2.f
t2.f:
 MAIN:
"t2.f", line 1: Warning: local variable "a" never used
     sub1:
     sub2:
system>> dbx a.out
Reading symbolic information...
Read 586 symbols
(dbx) stop in MAIN
(1) stop in MAIN
(dbx) run
Running: a.out
stopped in MAIN at line 4 in file "t2.f"
    4       m = 10
(dbx) step
stopped in MAIN at line 5 in file "t2.f"
    5       call sub2( )
(dbx) call sub2( )
  hello
stopped in MAIN at line 5 in file "t2.f"
    5       call sub2( )
(dbx) quit
system>>
```

Reference Number: 1000214
Synopsis: ioinit(3F) does not work as documented.
Release: 1.1, 1.4, 2.0beta

Description:
        The documentation states that 'ioinit(3F) initializes several
        global parameters in the f77 I/O system, and attaches externally
        defined files to logical units at run time'. This does not work
        as stated for an application that is porting software that opens and
        closes a port and then later again opens and closes the port, and that
        attempts to use ioinit(3F) to set the filename for the duration of
        the program run for particular logical unit numbers.
Work around:
        Call 'ioinit' before each 'open'.

Reference Number: 1000215
Synopsis: ioinit(3F) requires redundant loading of -lI77
Release: 1.1, 1.4, 2.0beta

Description:
        The FORTRAN statement 'ioinit(3F)' requires an explicit
        specification of -lI77 to resolve all references.
Work around:
        Explicitly specify -lI77 in the compilation or in the loading
        command line as in the following:

                f77 foo.f -lI77

Reference Number: 1000271
Synopsis: calling ioinit as per doc. causes link error
Release: 3.0

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

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Reference Number: 1002618
Synopsis: the -C option can cause f77pass1 to core dump
Release: 3.0, 3.2

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: 3.0

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.

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Reference Number: 1002926
Synopsis: REAL PARAMETER produces confusing error message
Release: 3.2

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.

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Reference Number: 1003554
Synopsis: SU format control broken for integer*2
Release: 3.0, 3.2

Description:

The following FORTRAN program shows incorrect results when it
uses the 'SU' format descriptor in a format statement to
perform an unsigned assignment of a variable declared as
'integer*2' to an 'integer*4' value:

```
      integer *2 x
      x=-1

      write ( *,10) x
10    format ("The value is", I10)

      write ( *,20) x
20    format ( "The value is", SU, I10)

      write ( *,30) and ( x, 65535 )
30    format ( "The value is", SU, I10)
      end
```

The results for release 3.0 and release 3.2 are:
system>> a.out
The value is   -1
The value is4294967295
The value is   65535

Work around:

The output of the third 'write' statement in the FORTRAN
program above shows that the workaround is to 'and'
the variable or expression with 65535 to the i/o statement.

Reference Number: 1003623
Synopsis: Character, common, equivalance, dbx problems
Release: fortran1.0, 3.2, 3.4

Description:

Character variables that are equivalenced to variables in
common are invisible to 'dbx', nor can they be equivalenced
to other character variables in the same common block.

The following program shows that character variables equivalenced to
variables in common are invisible to dbx. Compile it, run
it under 'dbx'. 'print line' will work; 'print x' won't.

```
character x*1
character line*80
common line
equivalence (line(1:1), x(1:1))

line = "This is a test.  This is a test."
print *, line
print *, x
end
```

The following program shows that character variables in common may
not be equivalenced to other character variables in the same common
block. It will not compile.

```
character x*1
character line*80
common line, x
equivalence (line(1:1), x(1:1))

line = "This is a test.  This is a test."
print *, line
print *, x
```

Reference Number: 1003626
Synopsis: Missing endif causes f77 to give bad label to assembler
Release: 3.0, 3.2, 3.4

Description:
Omitting an 'endif' statement in a series of nested 'IF' statements
causes the assembler and linker to give misleading error messages
such as the following:

as: warning (/tmp/f77pass1.7117.d.2.s:701): Undefined L-symbol
Undefined:
L47

Reference Number: 1003813
Synopsis: Statement function causes assembler error
Release: 3.2

Description:
The statement function on the third line of the following FORTRAN
program causes an error in the assembler code that is output from
the program's compilation:

```
subroutine init
real a
junk(zz) = sin(26.0 - zz)
a = junk(0.0)
return
end
```

The following shows the compilation and the resulting console messages:
system>> f77 t.f
t.f:
    init:
as: error (/tmp/f77pass1.15992.i.1.s:32): Invalid character
as: error (/tmp/f77pass1.15992.i.1.s:32): Invalid operand
Work around:
    Use a subroutine rather than a statement function in programs.

Reference Number: 1003942
Synopsis: error message gives no clue as to program's actual error
Release: 3.2

Description:
    When the FORTRAN program below is compiled, 'f77pass1' gives
    no error message to indicate that Sun's FORTRAN compiler does
    not allow an error label to point to a format statement:

```
    program a
    i=1
    write (6,22,err=10) i
22  format(i6)
10  format(i6)
    end
```

The assembler and linker catch the error, but give the
following misleading warnings:

a.f:
 MAIN a:
as: warning (/tmp/f77pass1.892.d.2.s:80): Undefined L-symbol
Undefined:
L16

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.

Reference Number: 1004008
Synopsis: f77 -i2 breaks logicals
Release: 3.2

Description:
   A logical test that works correctly under FORTRAN compilation
   without options, fails when the '-i2' option is specified.

Work around:
   Omit the '-i2' option if you are testing logicals.

Reference Number: 1004009
Synopsis: f77 -i2 breaks inquire( ) existence test
Release: 3.2

Description:
   When the following FORTRAN program 'inq.f' is compiled with the
   '-i2' option, the inquire( ) does not work properly.

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```
logical l
inquire(file='inq.f', exist=l)
if(l) then
      print*,'exists'
else
      print*,'nonexistent'
endif
stop
end
```

Run after each compile. Notice that the first time the file
exists and the second time it does not.

Work around:

Change the program to pass the first element of a logical array and
then test the second element. The example program may be changed
as follows:

```
logical l(2)
inquire(file='inq.f', exist=l(1))
if(l(2)) then
      print*,'exists'
else
      print*,'nonexistent'
endif
stop
end
```

Reference Number: 1004051
Synopsis: f77 -i2 breaks integer parameters in comparisons
Release: 3.2

Description:

An integer parameter set to 2 has a value of 2 when
printed out, but acts as if it has a value of 1 in
comparisons. These comparisons fail with the -i2
flag and work without it.

Work around:

Omit the '-i2' option in this case.

Reference Number: 1004073
Synopsis: f77 rewind breaks write on newly-created file
Release: 3.2

Description:

A bug shows up in a FORTRAN program that opens a file and rewinds
it. The program gets the corresponding UNIX file descriptor
via 'getfd(3F)' and calls a C routine to do a 'write(2)'. If the
file is not created prior to running the program and a 'rewind'
is done, the 'write' does not work and an empty file is created.
Without 'rewind' or if the file previously exists, the code works
correctly.

Work around:

Do not use rewind on a non-existent file. Open the file, close it,
and then re-open it.

Reference Number: 1004168
Synopsis: f77 doesn't allow opening all 30 file descriptors
Release: 3.2, 3.4beta

Description:

When attempting to use all thirty file descriptors available
in a Fortran program, a runtime error occurs and the program
aborts.

Reference Number: 1004169
Synopsis: Unix read of f77-opened file fails with "bad file number"
Release: 3.2, 3.4beta

Description:

When a new file is opened in Fortran and the file descriptor is
passed to a C routine, the C routine attempts to write to the
file, rewind with 'lseek', then read what it had just written.
This fails, producing the following error message:

Read: Bad file number
errno=9

Work around:

Open the unit, close it, and then re-open it.

Reference Number: 1004177
Synopsis: Cannot have variable named "units" in mixed C and FORTRAN
Release: 3.2, 3.4beta

Description:
> A fatal runtime error occurs when a program with mixed C and FORTRAN
> statements uses 'units' as a global variable name.

Work around:
> Do not name a global variable 'units' in the C portion of a mixed
> C and FORTRAN program.

Reference Number: 1004191
Synopsis: Large FORTRAN computed goto's cause core dumps
Release: fortran1.0beta, 3.2, 3.4

Description:
> When the following code is created as a 2506-line program
> and compiled, it core dumps.

```
        i = 2
        goto (1,2) i
1       write(*,*) i
        write(*,*) i   repeat this line 2500 times
2       write(*,*) i
        stop
        end
```

```
host>> a.out
*** Segmentation violation
IOT trap (core dumped)
host>>
```

Work around:
> Break up the computed 'goto' into several smaller chunks, or put
> the extra lines into a subprogram.

Reference Number: 1004206
Synopsis: dbxtool won't display source for f77 .F files
Release: 3.2, 3.4beta

Description:
> If the user compiles the following program with "f77 -g foo.F"
> (invoking the C preprocessor), and executes "dbxtool a.out",
> 'dbxtool' comes up with the messages "No Source Displayed" and
> "can't exec <program.f>" in the command window:

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```
program foo.f
i = 5
j = 6
end
```

Work around:

A workaround for the bug is to use following the command:

```
f77 -g -Qoption f77pass1 -Efoo.F  foo.F
```

rather than:

```
f77 -g foo.F
```

Note that there are no spaces between the -E and the file name.

Reference Number: 1004348

Synopsis: f77pass1 core dumps if parameter used in parameter stmt
Release: 3.2

Description:

When a subroutine parameter is used in a FORTRAN 'PARAMETER'
statement, 'f77pass1' core dumps rather than reporting
an error and continuing compilation.

Reference Number: 1004485

Synopsis: fortran x**y not correct for integral valued real y
Release: 3.2

Description:

The compiler attempts to optimize the expression on line 5 of
the FORTRAN program, 't.f', below by squaring the left side of the '**'
operator. When the left is an integer, and the right is
a real, the integer should be converted to a real; however,
this is not done.

```
C... FORTRAN program 't.f'
    program tstex1
    integer answer
    integer arg
    arg = 3
    answer = sqrt(arg**2.0)
    end
```

The following shows the compilation of 't.f' and the resulting error messages:

```
system>> f77 t.f
t.f:
 MAIN tstex1:
Error on line 5 of t.f: bad argument type to intrinsic sqrt
Compiler error line 5 of t.f: Impossible tag error in routine
map_fortnode
```

Reference Number: 1004671
Synopsis: f77 -O generates incorrect values within a loop.
Release: 3.2

Description:
The following FORTRAN77 program seqment shows a compiler optimization bug, with the generated code failing to save the "m-1" value into m1 on all but the first loop:

```
      parameter (ndim=5)
      real xx(ndim)
      data nn/ndim/
      data xx/1.0,2.0,3.0,4.0,5.0/
      call aaa(xx,nn)
      stop
      end
      subroutine aaa(x,n)
      real x(*)
      integer n
      y=1.0
      do 1 m=n,1,-1
      m1=m-1
      write(*,9001) m1
      if(y .le. 0.0) goto 1
      z = x(m)
      write(*,9002) z
1     continue
      return
9001  format('m-1= ',i3)
9002  format('z = ',f6.2)
      end
```

Reference Number: 1004833
Synopsis: redundant equivalences equivalence to the wrong address
Release: 3.2, 3.4beta

Description:
> The following code contains two equivalences which use the
> same two variables. The second one is redundant. When the
> code is compiled and run through 'dbx', it can be seen that
> neither equivalence has occurred.

```
integer jbuf
double precision endlin

dimension jbuf(7)
dimension endlin(2)

equivalence ( endlin(1), jbuf(3)), (endlin(2), jbuf(5))


jbuf(1) = 1
jbuf(2) = 2
jbuf(3) = 3
jbuf(4) = 4
jbuf(5) = 5
jbuf(6) = 6
jbuf(7) = 7

endlin(1) = 1D0
endlin(2) = 2D0

end
```

Compile it using f77 -g t.f

```
host>> dbx a.out
Reading symbolic information...
Read 306 symbols
(dbx) stop in MAIN
(1) stop in MAIN
(dbx) run
Running: a.out
stopped in MAIN at line 11 in file "t.f"
   11        jbuf(1) = 1
(dbx) print &jbuf[3]
&jbuf[3] = 0x21428
(dbx) print &endlin[1]   << note that the equivalence hasn't happened
&endlin[1] = 0x21438
(dbx) print &jbuf[5]
&jbuf[5] = 0x21430
(dbx) print &endlin[2]   << as you might expect same here.
&endlin[2] = 0x21440
(dbx) quit
host>>
```

Reference Number: 1005204
Synopsis: do loop index starting at 0 and -O cause fatal runtime bug
Release: 3.2, 3.4

Description:
The following program contains a pair of nested 'do'-loops,
with the outer 'do'-loop having its index beginning with 0.

```
        integer*4 i,j,m(100)
        do 1 i = 0,2
        do 2 j = 1,3
        m ( i j) = i * j
    2   continue
    1   continue
        end
```

When compiled with '-O' and '-C', the following error
message appears at runtime:

        Subscript out of range on file line 131076, procedure MAIN
        Attempt to access the 251657549-th element of variable m.
        IOT trap (core dumped)

If '-O' is used alone, the IOT trap still occurs.

Reference Number: 1005335
Synopsis: no error reported for characters after closing ')' in format statement
        Release: 3.2

Description:
        The FORTRAN77 compiler does not report a syntax error for
        characters following the closing ')' in 'format' statements.

Reference Number: 1006416
Synopsis: char strings get trashed when passed with extern func. name
Release: fortran1.0beta

Description:
        If a subroutine is passed character string(s) along with an external
        function/subroutine name, the character strings get garbled. The
        calculation of the string length, and the printing of the strings
        are inconsistent.
Work around:
        In the subroutine receiving the function/subroutine name along with
        character strings, perform either one of the following:

        1) Do not declare the external function

         OR

        2) Declare it integer instead of external

Reference Number: 1006440
Synopsis: dbx does'nt print correct values for logical*1 variables
Release: fortran1.0beta

Description:
        'dbx' prints incorrect values for 'logical*1' variables.

Reference Number: 1006926
Synopsis: F77 bug on option-C
Release: 3.2, 3.4

Description:
        Using subscripted array references in an internal I/O
        statement (either 'read' or 'write') while bounds
        checking with the '-C' option causes the compiler
        to abort with a segmentation violation.

Work around:
>   Either eliminate the array reference in the internal I/O,
>   or suppress bounds checking.
>   A combination of using subscripted array references in an internal
>   read or write while bounds checking (-C) is enabled will cause compiler
>   to abort with segmentation violation.

Library

Reference Number: 1000077
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: 1004297
Synopsis: 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)
}
```

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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.

Reference Number: 1004834
Synopsis: Alarm going off during function call trashes results.
Release: 3.2

Description:
The C program below eventually fails when it is run with the
alarm( ) call. During the call to 'sprintf()', 'SIGALRM' is
received and the program control is transferred to the
signal handler. When control returns from the signal handler,
the stack has been changed; hence, the program gives incorrect
results.

The following first gives the C program, then the
commands and the C shell script used to run it.

C Program:

```
#include <stdio.h>
#include <signal.h>

extern int sigfunc( );

main(argc,argv,envp)
    register int argc;
    register char **argv;
    register char **envp;
{
    register int i;
    char s1[50], s2[50];

    signal(SIGALRM,sigfunc);
    alarm(1);

    for(i = 0 ; i < 1000000 ; i  )
    {
        sprintf(s1,"%d",10);
        sprintf(s2,"%d",10);
        if (strcmp(s1,s2))          {
            printf("%d\n",i);
            puts(s1);
            puts(s2);
            exit(1);
        }
    }
    exit(0);
}

sigfunc( )
{
    alarm(1);
}
```

Commands used:

```
#1 cc -o SO81421 SO81421.c
#2 SO81421.csh
64425
10
14
ERROR :  sprintf( )
#3
```

C shell used:

```
#!/bin/csh
while (1)
      SO81421
      if ($status) then
            echo "ERROR : sprintf( )"
            exit 1
      endif
end
```

Reference Number: 1006326
Synopsis: strtod returns incorrect terminating character pointer
Release: 3.4

Description:
> When the following code is compiled, 'strtod' should return a
> pointer to the 'i' character terminating the scan, but actually
> returns a pointer to 'j', the character following 'i'.

```
t.c-------
main( )
{

      char val[10];
      char **term;
      double strtod( );
      double result;

      strcpy(val,"1ijkl");
      printf("%s\n",val);
      result = strtod(val,&term);
      printf("%g\n",result);
      printf("%s\n", term);
}
```

> If the '1' in 'strcpy(val,"1ijkl");' is changed to '0', the correct
> pointer ('i') is returned. Thus, this feature only appears to function
> correctly if the number is '0'.

Reference Number: 1006370
Synopsis: stdio package not buffering as documented.
Release: 3.4

Description:
> The UNIX System V Release 2 'fputs' does not handle line
> buffering properly when doing 'putc' on each character of
> a string.

Work around:
> Write a version of 'fputs' that simply scans through the string
> and does a 'putc' on each character.

Reference Number: 1007025
Synopsis: sscanf( ) terminates after it encounters two adjacent field separators
> Release: 3.4

Description:
> A problem with the way in which the 'sscanf' function is
> implemented under SunOS 3.4 occurs when attempting to use
> 'sscanf' to extract fields separated by some field separator
> (such as a ':' or an '!'). If the extracted field is null,
> that is, 'sscanf' encounters two adjacent field separators,
> 'sscanf' terminates without processing the remaining fields.
> Under SunOS 3.0, 'sscanf' processed all fields in the input
> stream.
>
> The following program shows how the problem exhibits itself
> when compiled under SunOS 3.0 and SunOS 3.4 and run with
> 'dbxtool':

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```
#include <stdio.h>
#include <strings.h>

extern int    errno;

static char    buffer[]="rda:xxxx::zzz:8";
static char    fld1[10];
static char    fld2[10];
static char    fld3[10];
static char    fld4[10];
static int     fld5;
static char    token1;
static char    token2;
static char    token3;
static char    token4;

main()
{
    int n;

    n = sscanf(buffer, "%[^:]%c%[^:]%c%[^:]%c%[^:]%c%d",
    fld1, &token1, fld2, &token2, fld3, &token3, fld4, &token4, &fld5);
}
```

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

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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".

Reference Number: 1004471
Synopsis: Lint library def. for "openlog"
Release: 3.2

Description:
The 'lint' library description for the routine 'openlog' indicates
that it returns no value. The manual entry for 'openlog(3)' indicates
that it returns '0' on success; however, the code actually returns '0'
on success and '-1' on failure.

This causes lint to report erroneous errors in programs that
check for the return value.

Reference Number: 1006670
Synopsis: /usr/5bin/lint fails on file names > 16 chars
Release: 3.4

Description:
'/usr/5bin/lint' (UNIX System V 'lint') fails on input files
with names longer than 15 characters, and prints out the
following error message a varying number of times:

lint error: too many header

Work around:
Limit file name lengths to 15 characters or less, or
use '/usr/bin/lint' instead of '/usr/5bin/lint'.
/usr/5bin/lint fails on input files that have a name longer than 15
characters. It erroneously prints out a varying (depends on the
contents of the input file) number of "lint error: too many header
files" messages.

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
ysen = 2
j = 1
cm(xsen,j) = c(xsen,j)   c(ysen,j)
cm(ysen,j) = c(ysen,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 with"-O", run on Sun-3/260	crashes with segmentation violation

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)
```

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Reference Number: 1003602
Synopsis: fortran optimizer causing IOT trap errors
Release: 3.0, 3.2

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.

Reference Number: 1004841
Synopsis: fortran optimizer bug
Release: 3.2

Description:
    When the following FORTRAN program is compiled with -O, it
    generates the wrong results:

```
        integer ndtfil, ndttab
        integer ntabfl(15), tabptr(15)

        ndtfil = 0
        ndttab = 5
        tabptr(1) = 0

        ndtfil = ndtfil   1
        ntabfl(ndtfil) = ndttab - tabptr(ndtfil)
        tabptr(ndtfil) = tabptr(ndtfil)   1

        print *, 'ndtfil = ', ndtfil, 'ndttab = ', ndttab
        print *, 'ntabfl(ndtfil) = ', ntabfl(ndtfil)
        print *, 'tabptr(ndtfil) = ', tabptr(ndtfil)

        stop
        end
```

Running the program gives the following results:

```
ndtfil =  1  ndttab =  5
ntabfl(ndtfil) =  0
tabptr(ndtfil) =  1
```

ntabfl(ndtfil) should be 5.

Reference Number: 1004930
Synopsis: optimizer using expression 10-I as I-10
Release: 3.2, 3.4beta

Description:
Infrequently, the optimizer switches the order of operands in expressions passed as arguments to procedures in the file of assembler instructions that are output from compilation of a FORTRAN program.

Reference Number: 1005317
Synopsis: c2 doesn't represent "movw #const,sr" correctly
Release: 3.2, 3.4

Description:
In the program example below, an attempt is made to include an inline file that sets the status register. In the code generated by the compiler/optimizer, register 'd7' is referenced without ever being set.

INPUT FILES:
```
:::::::::::::::
test.c
:::::::::::::::
extern  short   gmsgbuf;  /* message output buffer */
extern  short   *gmsgptr; /* available message storage pointer */

short  *Hgetbuf(size)
register      short   size;
{

        register      short *msgptr;
        extern int splx( );

        (void)splx(5);
        msgptr = &gmsgbuf;
        gmsgptr = &gmsgbuf   size;

        (void)splx(2);
        return(msgptr);
}
:::::::::::::::
test.c.il
:::::::::::::::
| this is an example of inline assembly for SUN
| compile as cc -O -S test.c test.c.il
        .inline _splx,4
        movl sp@ , d1
        movw sr, d0
        movw d1, sr
        .end
```

OUTPUT FILE:
::::::::::::::
test.s
::::::::::::::
        .data
        .text
LL0:
|#PROC# 023
        LF14 =   8
        LS14 =   8320
        LFF14   =   0
        LSS14   =   0
        LP14 =   12
        .data
        .text
        .globl _Hgetbuf
_Hgetbuf:
|#PROLOGUE# 0
        link   a6,#-8
        moveml   #8320,sp@
|#PROLOGUE# 1
        movw   #5,sr
        lea   _gmsgbuf,a0
        lea   a0@(0,d7:w:2),a0
        movl a0,_gmsgptr
        movw   #2,sr
        movl a5,d0
        moveml   a6@(-8),#8320
        unlk   a6
        rts

        Since c2 cannot represent 'movw #const,sr' correctly, the
        live-register information is lost at that point.
Work around:
        Use a subroutine call to set the status register.

Reference Number: 1005821
Synopsis: Fortran code gets "no label to unreference" message
Release: 3.2, 3.4, fortran1.obeta

Description:
        The Fortran program example below causes a fatal 'c2'
        optimizer error.

```
      INTEGER I99939
      GO TO 880
  10 ASSIGN 880 TO I99939
      IF (.true.) GO TO I99939
 880 continue
      END
```

```
system% f77 -O t.f
t.f:
 MAIN:
c2: Optimizer Error-- no label to unreference, op = 0x1bmuse>>
```

Reference Number: 1005827
Synopsis: Fortran code gets iropt error in set_iv
Release: 3.2, 3.4, fortran1.0beta

Description:
   The following Fortran program example returns a fatal 'iropt'
   error when compiled with the '-O' option.

   FORTRAN CODE:

```
      INTEGER CURSOR,I99939,LOLD
      CHARACTER OLDSTM* (1326)
      INTRINSIC INDEX
  70 continue
      GO TO I99939
  10 GO TO 690
  20 LOLD = 1
 690 continue
 760 ASSIGN 770 TO I99939
 770 CONTINUE
 860 cursor = INDEX(OLDSTM(CURSOR:LOLD),'=')
 870 CURSOR = - 1
 910 IF (.true.) GO TO 70
      END
```

COMPILATION RESULTS:

```
system% 1759
f77 -O t2.f
t2.f:
 MAIN:
compiler(iropt) error:  set_iv: possible induction var marked as region const
system%
```

General

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 is called after "cpp"(the C pre-processor)
    and before "ccom"(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.

Reference Number: 1004498
Synopsis: "cc -a" complains of syntax error in source
Release: 3.2

Description:
    When "cc -a" is attempted on some files, cc gives unwarranted
    syntax errors for the source.

    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 "ccom"(scanner- parser-intermediate code generator of the
    C compiler).

    "bb_count" identifies basic blocks. So when it sees the {....},
    it believes that it has a new block. This is problematic if there
    are struct definitions, macros in the declarations section. Seeing
    the {....} "bb_count" inserts code that "ccom" complains about.
Work around:
    Eliminate the {...} constructs in the declaration section.

Reference Number: 1004805
Synopsis: running lint under shell in background can kill lint
Release: 3.2, 3.4

Description:
Under certain circumstances, background processes (such as
lint) can be killed accidently while logged in using
bourne shell. For example, if a user logs (not as su)
using /bin/sh as the login shell, then starts up a lint
process in the background and starts another process such
as 'tail' (which is aborted using ^C), the shell kills
the lint process as well.

Reference Number: 1007001
Synopsis: cpp core dumps in symbol table lookup routine
Release: 3.4

Description:
While preprocessing files with large numbers of identifiers,
'cpp' (Release 3.4 and earlier) can run out of buffer space,
and produce the following error message when it fails:

Segmentation fault (core dumped)

Work around:
Using Release 3.4 SunPro 'cpp' will sometimes alleviate
the problem.

Utilities

Reference Number: 1002668
Synopsis: cpp doesn't handle 2 macros broken over lines
Release: 3.3, 3.2

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);
}
```

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The following output is produced:

```
% 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.

Cross Compilers

Cross Compilers
FORTRAN Cross Compiler

Reference Number: 1007013
Synopsis: Fortran Cross compiler breaks -pg option
Release: crosscomp2.0

Description:
>If the cross compiler is installed, the '-pg' and '-p' flags
>may not work properly for the FORTRAN compiler. This can
>happen whether or not the cross compilation features are
>being used.

Work around:
>If the C shell is used, include the following aliases
>in the '.cshrc' file:

>>alias f77p "f77 -Qoption f77pass1 -p -c *"
>>alias f77pg "f77p *"

>If the Bourne shell is used, define the following shell
>commands:

>>f77p( )   { f77 -Qoption f77pass1 -p 0c $*; }
>>f77pg( ) { f77p $*; }

>When compiling object files from FORTRAN source code, use
>'f77p' in place of 'f77 -p', and use 'f77pg' in place of
>'f77 -pg'. Note that these aliases produce relocatable
>('.o') files, not a linked executable file.

>Use a separate 'f77 -p' or 'f77 -pg' command for linking
>the object files into an executable file.

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Data Communications

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).

Reference Number: 1005647
Synopsis: bsc3270 panics system if phone line not connected
Release: SunLink3.0

Description:
> If bsc3270 is started, then stopped without connecting to the host, the following panic occurs:

> > panic: BAD_LINE

> This occurs when 'stopbsc' is executed when the following conditions are true:

> 'startbsc' has been previously executed (bsc3274 is running)

> The comm line is a dial-up but has not been opened (no host connection made)

> The terminal emulator is not running ('startte' has not been issued)

> Panic seems to occur as if the code always expects a line open and then does not know what to do if there is not a line open after a 'stopbsc' is issued.

Work around:
> Dial up each time bsc3270 is started, as well as before stopping bsc3270.

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: 1000321
Synopsis: Device/file name incorrect on some error messages
Release: SunLink1.0

Description:
> The device name such as 'KEYBOARD', 'RDR', 'PTR', or 'PUN', and/or
> the filename are occasionally incorrectly reported in the error
> message for the previous file sent or received.

Reference Number: 1000322
Synopsis: Error message "Formatting error" reported twice
Release: SunLink1.0

Description:
> When a file sent in 2780 or 3780 mode contains invalid control
> characters, the following error message is reported twice:
>
> ...formatting error...

Reference Number: 1007347
Synopsis: Usage line for rje -h shouold specify gateway name
Release: SunLink5.0

Description:
> The 'rje' usage line for the '-h' option should read
> gateway name, not hostname.

Channel

Reference Number: 1006801
Synopsis: Bad length returned on write/read if followed by select ccw.
Release: SunLink5.0

Description:
> If a 'WRITE' or 'READ' type channel command is followed by a
> 'SELECT' type command, and the emulation code signals 'CE'
> and 'DE' together on the 'WRITE' or 'READ', the Sun client
> may receive the incorrect length on the 'READ' or 'WRITE'.

Work around:
> Change the emulation to either signal 'DE' and 'CE' separately
> for any 'READ' and/or 'WRITE' commands that may be followed
> by a 'SELECT', or redefine the 'SELECT' command to be a
> 'CONTROL' type command , if it is a 'SELECT' command with
> zero length.

DDN

Reference Number: 1007733
Synopsis: Sunlink/DDN X.25 does not work with PSN 7.0
Release: SunLink5.0

Description:
      Several problems prevent Sunlink/DDN X.25 from working
      correctly with the PSN 7.0 software release on the Arpanet.
Work around:
      Restart the X.25 manager every few hours.
      Several problems prevented Sunlink/DDN X.25 from working correctly
      with the PSN 7.0 software release on the Arpanet.

DNI

Reference Number: 1003840
Synopsis: dnalogin doesn't handle the backspace character correctly
Release: SunLink4.0, SunLink5.0

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 problem does not occur
      when using 'dnalogin' to login to another Sun.

Reference Number: 1005036
Synopsis: dnalogin doesn't handle raw mode properly
Release: SunLink4.0, SunLink 5.0

Description:
      When logged into VMS/VAX using 'dnalogin', an attempt to set
      the VMS tty to 'PASTHRU' (similar to 'RAW' mode) does not
      work properly. In 'PASTHRU', '^C' and '^Y' are normally
      ignored, but when dnalogged into VMS/VAX, '^C' and '^Y' are
      not ignored.

Reference Number: 1005044
Synopsis: ^D ^F ^E ^H ^J ^X not mapped properly
Release: SunLink4.0, SunLink5.0beta

Description:
      The UNIX line editing functions '^D', '^F', '^E', '^H', '^J', and
      '^X' do not get mapped correctly from UNIX to VMS. For example,
      the UNIX '^W' function acts as a VMS '^J' function; the UNIX '^H'
      function acts as a VMS 'DELETE', but the cursor does not move; and
      the UNIX '^X' function acts as a VMS '^U' function.

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Reference Number: 1006184
Synopsis: DNI does NOT do re-assembly of incoming packets
Release: SunLink4.0

Description:
>   The DNI programming interface will complete the read on a
>   per-packet basis, and thus does not perform a reassembly of
>   incoming packets.

Work around:
>   Any applications that depend on a message interface
>   must be rewritten to work with the existing DNI
>   'segment interface'.

Reference Number: 1006651
Synopsis: MASS-11 causes VAX to crash over a dnalogin session
Release: SunLink5.0beta

Description:
>   When using 'dnalogin' to access a VAX/VMS V4.5, then
>   invoke a PDP-11-type word processor, the word processor
>   prompts, but nothing typed from the keyboard is
>   echoed, with the exception of '^C'. After typing
>   about 30 ^C's, the VAX crashes.

Reference Number: 1007228
Synopsis: can't send or receive 0 len data packets
Release: SunLink5.0

Description:
>   Some applications use null packets as message delimiters,
>   which are not supported by the DNI programming interface.

Reference Number: 1007407
Synopsis: dnalogin terminates with protocol error code 12
Release: SunLink5.0

Description:
>   A 'dnalogin' session terminates with protocol error code 12
>   from the Sun either on a Sun Window or vt100. For example,
>   when a user exits from VAXPHONE, 'dnalogin' terminates
>   the connection, and the following appears:

>   protocol error error code 12

vtsession terminated
process_dna_input_failed

To close the port, the user must use '^Y'.

Reference Number: 1007449
Synopsis: Double-height doesn't work properly over a dnalogin session
Release: SunLink5.0

Description:
Double-height does not work properly over a 'dnalogin' session
when logged into a VAX, then set host back to Sun (or another
VAX). The output of a double-height is split in half with
a blank line between it.
Work around:
Do not use more than one level of remote login to the Sun
if the application requires double height attributes.

Reference Number: 1007483
Synopsis: security issue with the dna user
Release: SunLink5.0

Description:
'dnaserver' has two modes: secure mode, in which the incoming
login request must include correct authorization, and unsecure
mode, in which anyone on the network can read and write files
on the Sun, providing UNIX file permissions are set accordingly.
When in secure mode, it is not possible to remotely log in from
a VAX with the 'dnaserver', as this requrest does not have
authorization information.
Work around:
The system administrator must manually run 'dnaloginid' before
a user calls in from the VAX.

Documentation

Reference Number: 1005236
Synopsis: SCP doc implies Sun supported asynchronous capability
Release: SunLink4.0

Description:
Refer to the SunLink Commnication Processor Installation and
Configuration Guide. The text in the Introduction and in
Chapter 5 should clearly indicate that Sun Microsystems
does not support the development of custom protocols

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on the SunLink SCP.

Reference Number: 1007078
Synopsis: INR Sys Admin manual mentions throughput instead of baud rate
Release: SunLink5.0

Description:
> Refer to the Internetwork Router System Administration
> Manual, pages 5 and 6. There are a number of locations
> where the word 'throughput' is used to refer to line speed.
> A suggested substitute word to better describe the line speed
> would be 'baudrate' or 'line speed'.

Reference Number: 1007103
Synopsis: x.3 parameter 3 incorrect in SunLink X.25 User's Guide
Release: SunLink5.0

Description:
> Refer to the SunLink X.25 User's Guide. On page 22 of
> Table A-1, the line that reads as follows is in error:

> 3 : ESC, BEL, ENQ, ACK

Work around:
> Change the line to read as follows:

> 4 : ESC, BEL, ENQ, ACK

Local 3270

Reference Number: 1005994
Synopsis: pe3287 panic 3 if more than 111 devices specified
Release: SunLink5.0

Description:
> The default range of device numbers (0-255) causes pe3287 to die
> with a 'panic(3)' message. This also occurs whenever a range of
> more than 111 divices is specified.

Work around:
> Explicitly specify device with '-t' option or 'D3274' env
> variable. Do not specify a range with a total of more than
> 111 devices.

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Reference Number: 1006625
Synopsis: Lost attentions especially in DAI applications
Release: SunLink5.0

Description:
When running DAI applications under Local3270, attentions
are sometimes lost. This can cause the application to
hang unless it has some sort of timeout mechanism.
Work around:
Be sure the DAI application implements some sort of timeout
mechanism to retry lost attentions.

MCP

Reference Number: 1007225
Synopsis: MCP incorrectly turns software carrier detect flag off
Release: SunLink5.0

Description:
The user is running port 2 or 3 on the MCP board as an async port
at any baud rate, and in raw mode with echo turned off. When using
a program that opens /dev/ttyh2 and does a select with timeout
set to NULL (such as ' (struct timeval *)NULL'), and where
select waits for input on /dev/ttyh2, (such as 'rdfds = 1 << fd'),
the select should only return if there is input waiting
on one of the file descriptors. What happens is the select
returns right away, even though nothing has been sent to
the port. This can be verified by doing 'FIONREAD ioctl'
immediately after the return from the select.

OSI

Reference Number: 1005962
Synopsis: ifconfig with a bad 802 address panics
Release: SunLink5.0

Description:
An 802 address with only five parts, such as '8:0:60:16:3F'
causes a panic, and the following error message appears:

panic: llc: unknown lower ifnet interface

Work around:
Check the addresses very carefully when installing OSI.

Reference Number: 1005964
Synopsis: An overloaded osi kernel can "panic: sleep"
Release: SunLink5.0

Description:
>   An overloaded OSI kernel can cause the following message
>   to appear when the kernel runs out of memory:

>   panic: sleep

Work around:
>   Run OSI kernel on a system with a larger memory capacity.

Reference Number: 1006013
Synopsis: mapcp sometimes dumps when talking to a busy system
Release: SunLink5.0

Description:
>   When run on a busy system and when talking to a busy
>   system, 'mapcp' sometimes dumps core.

Work around:
>   Keep machines loaded lightly.

Reference Number: 1006080
Synopsis: OSI/x25 kernel panics under heavy load & fragmentation
Release: SunLink5.0

Description:
>   If a transport connection is established under the conditions
>   listed below, the system panics with either an address exception
>   or a bus error. Examination of a kernel dump will show a trap in
>   one of OSI's 'ind' routines.

>   1. The connection must be established on a machine with an
>   OSI/x.25 kernel.
>   2. The connection must be routed via the x.25 link.
>   3. The transport PDU (packet) size must be larger than
>   the x.25 packet size, causing fragmentation.
>   4. The x.25 connection is busy.

Work around:
>   On machines with x.25 connections, use 'osi_config' to set the
>   OSI transport packet size to something which fits in an x.25
>   packet, such as the following example:

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osi_config set tp t_max_pdu 128

Reference Number: 1006403
Synopsis: OSI Transport Service with alternative class=4 not accepted
Release: SunLink5.0

Description:
> The OSI Transport Service does not accept a Connect Request with
> the proposed 'class=4' and the alternative 'class=4'. According
> to the spec, it is legal for the alternative class to be either
> 4 or 2 if the proposed class is 4.

Reference Number: 1006689
Synopsis: System hung after a transport expedited data request
Release: SunLink5.0

Description:
> A caller and a listener are on the same SUN-2 host machine, and
> are running Unix 3.2 and default OSI configurations. After a
> session is established between the caller and the listener in
> the transport layer and before any normal data were exchanged, if
> an expedited data request is sent by either the caller or the
> listener, the system hangs after exactly 2 minutes. After that,
> the system is virtually frozen until a system reboot is performed
> by the user.

Reference Number: 1006693
Synopsis: System crash OSI transport layer stress testing
Release: SunLink5.0

Description:
> A caller and a listener are both on the same Sun-2 host machine.
> When the OSI transport layer stress testing programs are running to
> transfer data between the caller and listener for several hours,
> the system gets into a panic mode, returns a bus error message,
> and reboots itself.

Reference Number: 1006739
Synopsis: Un-initialized register variables in routine osi_getval.
Release: SunLink5.0

Description:
>The register variables in routine 'osi_getval' are not initialized
>properly. As a result of this, if a user also uses register
>variables in his osi application program and calls the routine
>'osi_parseaddr' to set the 'OSI SAP' address, which in turn
>calls the routine 'osi_scan' and then the routine 'osi_getval',
>the registers might get corrupted and result in returning
>unexpected errors.

Work around:
>Do not use register variables in the application programs if it
>calls the routines 'osi_parseaddr', 'osi_scan', 'osi_getval', or
>'mds_lookup'.

Reference Number: 1006830
Synopsis: System Crash on Binding Incorrect Socket
*   Release: other [SunLinkosi5.0]

Description:
>If SunLink OSI Link Layer protocol 'OSIPROTO_LLC' is not configured
>in the kernel and the user tries to get a socket for an application
>program using the Link Layer protocol, the user gets only one
>rejection on the first attempt. On the second attempt, a socket
>which does not support Link Layer Protocol is assigned to the
>user for binding. If the user proceeds to bind a Link Selector to
>this socket, the system crashs and reboots itself.

Work around:
>Ensure that the system kernel supports Link Layer protocol.

SNA 3270

Reference Number: 1003792
Synopsis: lu1 scs pe3287 does not tab properly
Release: SunLink4.0

Description:
>When using a SCS-type (lu1) pe3287 printer, tabs are not handled
>properly in 'f1scs.c'.

Reference Number: 1003794
Synopsis: lu1 pe3287 puts 2 returns after 132-col output
Release: SunLink4.0

Description:

When using a SCS-type (lu1) pe3287 printer, two carriage returns are
inserted after 132-column output lines.

Reference Number: 1003795
Synopsis: lu3 pe3287 loses blanks in column 1
Release: SunLink4.0

Description:

When using a DSC-type (lu3) pe3287 printer, blanks are lost in
the output of column 1.

Reference Number: 1003807
Synopsis: line still hung after re-dialing following a FRMR
Release: SunLink4.0

Description:

When running through an SCP at 4800 baud rate and some line noise is
experienced, the SDLC code misinterprets the frame and sends out an
FRMR. When the host sees the FRMR, it does not attempt recovery.
The primary side is responsible for recovery, so the host appears to
stop dealing with the link. SNA/SDLC must be stopped then restarted
before redialing the host.

Reference Number: 1004758
Synopsis: sna3270 sends rsp to WSFRPQ but mishandles the query reply
Release: SunLink4.0

Description:

When a Sun is connected to a Stratus host, the primary sends the
Sun a 'Read Partition Query Write Structured Field' command.
The Sun sends a ' rsp', even though the Sun does not support
structured field commands. The query reply that follows the
' rsp' appears to be ill-formed and incorrect. Note that the
Stratus is operating incorrectly by sending the Sun Structured
Fields, even though it has been instructed that these are not
supported.

Reference Number: 1006050
Synopsis: sdlc should not count address errors if multipoint
Release: SunLink5.0

Description:
> 'netstat -i -a' counts address errors, should an inappropriately
> large number of 'Ierrs' for the SDLC layer, because 'sdlc_in.c'
> simply bumps the 'if_ierrors' counter when it sees a packet
> not addressed to it. This occurs regardless of whether or not
> the line is multipoint.

Reference Number: 1007171
Synopsis: te3278 does not run correctly in vt100
Release: SunLink3.0, SunLink 4.0, SunLink 5.0

Description:
> When running te3278 in a vt100tool window or on a vt100 terminal
> where 80-column output is displayed and continued onto a second VM/CMS
> screen, the previous screen is not erased properly, thus rendering
> the second screen unreadable.

Work around:
> By undefining the 'down' capability (':do:') for the vt100 and
> re-running 'scinit' provides a much more readable screen.

Reference Number: 1007186
Synopsis: te3278: left and right square brackets disabled.
Release: SunLink3.0, SunLink 5.0

Description:
> The te3278 program does not allow the use of left and right square
> brackets (AD and BD in EBCDIC). These brackets are disabled in
> the 'scinit' program.

Reference Number: 1007211
Synopsis: CTS timeout should be longer
Release: SunLink5.0

Description:
> The current timeout for CTS (Clear-To-Send) is .3 seconds. In some
> cases, this may be too short.   The line drops with the '530'
> error, thus indicating that CTS has been lost.

vt100tool

Reference Number: 1007451
Synopsis: vt100tool re-maps F3-F4 keys improperly
Release: SunLink4.0

Description:
>   When cursormode is set and the keyboard focus is not in
>   the vt100tool, the 'F3', 'F4', 'F5', 'F6' function keys are
>   re-mapped to 'ESC[OA', 'ESC[OB', 'ESC[OC' and 'ESC[OD' for
>   all windows (such as shelltools, commandtools, and so on).

Work around:
>   Leave the keyboard focus in the vt100tool when setting the
>   vt100tool to cursor mode.

X.25

Reference Number: 1006605
Synopsis: x.25 reverse charging check actually only uses preset value
Release: SunLink4.0

Description:
>   When using 'RD_FACILITY' to determine which facilities are being
>   used for each virtual circuit, the facility structure returned by
>   the 'ioctl' does not reflect the negotiated facilities, and the
>   user cannot acurately determine whether or not the reverse
>   charge bit is set or not set as desired.

Reference Number: 1006815
Synopsis: PAD echoes passwords if account has no /bin/csh defined
Release: SunLink4.0

Description:
>   A problem with masking a password when calling a Sun with x25 software
>   appears when a user logs in and has a 'bin/sh' (Bourne shell) defined
>   in the password file on the called side. The echo on the calling
>   machine is not disabled, so the typed password is still visible.
>   If the password file contains '/bin/csh' (C shell), the echo on the
>   calling machine is disabled, and the password is not visible.

Reference Number: 1006832
Synopsis: Bad message if Pad invoked with packet or hdlc level down
Release: SunLink4.0

Description:
>   When either the the packet or the hdlc level goes down (and no message
>   appears if this happens) or they have not been initialized, if the

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'pad' command is issued, the message 'calling...' appears, and will remain displayed.

Reference Number: 1006833
Synopsis: 40 x.25 virtual circuits seem to tie up a Sun
Release: SunLink4.0

Description:
The practical maximum of virtual circuits that can be used is around 40, and not 64. When more than 40 are used, the message 'proc table full' appears, and network congestion on the dte side increases to the point where all that is being passed is a massive number of 'RNR's.

Reference Number: 1006836
Synopsis: With non standard errors on , never get clear confirm
Release: SunLink4.0

Description:
When 'Non_standard error' is enabled (set 'on') in the '/etc/x25params' file, the user never gets a clear confirmation. Both sides of the connection end up sending sync's in both directions, rather than the clear confirmation.

Reference Number: 1006907
Synopsis: x.25 program crashing system periodically
Release: SunLink5.0

Description:
When programming code using the X.25 interface, 'diag.data1env' fields must be initialized before issuing the 'X25_WR_CAUSE_DIAG' call; otherwise,the system will crash.

Reference Number: 1006908
Synopsis: x29 does not set value of parameter 7 on start up
Release: SunLink5.0

Description:
The X.29 listening daemon /usr/SunLink/x25/svr/x29' does not set a value to parameter 7 at startup time. This can lead the two ends of the conversation to believe that parameter 7 is set to different

and incompatible values.

Reference Number: 1006909
Synopsis: x29 does not set x.25 facilities for fast select
Release: SunLink5.0

Description:
> The X.29 listening daemon 'usr/SunLink/x25/svr/x29' does not set
> the X.25 facilities to allow a fast select call to be accepted by the
> daemon.

Reference Number: 1006912
Synopsis: HDLC max frame should be used in packet negotiation
Release: SunLink5.0

Description:
> When using X.29 and X.25, the X.25 packet layer should take into
> account the hdlc maximum frame size when performing packet size
> negotiation. If it does not do so, a call can be made or accepted
> which will cause the hdlc layer to have to reset the link layer.
>
> When a call is made out, X.25 should modify the requested packet
> size to be one allowed by the hdlc maximum frame size before sending
> the call out. The connect system call should not be faulted back to
> the application, as this is non-deterministic.
>
> When a call is received, the X.25 system should not negotiate
> the call to use a larger packet size than the hdlc layer will handle.

Reference Number: 1006913
Synopsis: x29 adding eofs to vi'ed files
Release: SunLink4.0

Description:
> In X.25 svr/x29, SunLink Release 4.0, the X.29 daemon appears to
> manufacture end-of-files under certain circumstances. This has
> been noticed only when exiting 'vi' within an automated logging
> program. When using a line protocol analyzer, there is no
> record of packets which contain '^D' characters.

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Reference Number: 1006915
Synopsis: pad outputs extraneous messages when reset command issued
Release: SunLink5.0

Description:
The 'pad' command outputs some extraneous messages about 'RESET's
when the 'reset' command is issued at the pad executive.

Reference Number: 1006999
Synopsis: x29 login on /bin/sh account causes SIGHUP to be ignored
Release: SunLink5.0

Description:
When logging in through X.29 and with a '/bin/sh' as the shell,
the signal 'SIGHUP' is ignored. Thus, if the virtual circuit is
closed for some reason, the shell and application receive the
'SIGHUP' signal, but do not die. The next person to log in will
then get back into this application. This problem does not
occur if the user logs in using 'rlogin' or 'telnet'.

Reference Number: 1007391
Synopsis: vcstat gets a segmentation core dump when active lcn used
Release: SunLink5.0

Description:
A segmentation fault (core dump) occurs when issuing the
command 'vcstat lcn'. The 'lcn' logical channel number
must be active for the user to receive the dump.
If 'lcn' is set to 0, the command works properly.

Reference Number: 1007455
Synopsis: Routing table plague: X.25 5.0 & SunOS 3.3, 3.4, and 3.5
Release: SunLink5.0

Description:
Point-to-point IP interfaces on systems running SunOS 3.4,
MCP 5.0, and X.25 will have nonsense netmasks. This
can be detected in 'ifconfig' output, where the netmask will
be the same as the interface address. For instance:

```
system: ifconfig xvc0
xvc0: 192.9.105.2 netmask 192.9.105.2 flags=51<UP,POINTOPOINT,RUNNING>
system:
```

This bug may cause routing problems, and should be suspected in large networks with routing problems and X.25/IP links.

Reference Number: 1007780
Synopsis: x.25 logged in users do not appear in the "users" output
Release: SunLink5.0

Description:
Users logged into a Sun from X.25 do not appear in the 'users' output. They do appear in 'who' and 'w', although the count of users in 'w'" is incorrect. It appears that 'svr/x29' does not make the correct accounting entry, possibly in '/etc/utmp'.

Diagnostics

Diagnostics

Reference Number: 1005624
Synopsis: serial port test fails.
Release: proms

Description:
> In the following setup, the 'diag' test fails intermittently.
> The error is always the same on a port B read (the data is 0xFC
> instead of 0x00).
>
> Setup: 3/50 in diag mode with a monitor in port A.
> Test: Serial Port Test - Wr/Rd SCC Reg 12 Test. Write 0x00
>   to port B, then read it back.

Reference Number: 1006676
Synopsis: Sending reset sequence to 3/60C console hangs console.
Release: 3.4, 3.5beta

Description:
> Logging directly into the console of a 3/60C (no suntools) and
> executings 'reset(1)' causes the console to hang as the 'rs' field
> from 'termcap' is echoed. The cursor disappears and all attempts
> to get any response from the console fails. Note that this
> problem has been fixed in boot prom release 1.6 and later.

Work around:
> Reboot from the network.

Documentation

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Reference Number: 1004855
Synopsis: Documentation for set_vertex_indices( ) is misleading
Release: 3.0

Description:
>Refer to the SunCore Reference Manual. The documentation
>for 'set_vertex_indices( )' leads the user to believe that
>'color_index_list' is an array of indices in the predefined
>colormap, but the list isn't documented.

Work around:
>To determine the number needed in 'color_index_list',
>take the number of the desired color index and multiply
>that number by 4. Use the result in 'color_index_list'.

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: 1004303
Synopsis: Insufficient doc for describing how to set cmap in a window.
Release: 3.2, 3.0

Description:
>Refer to the SunCore Reference Manual. The documentation
>describes how to set the colormap by using the routine
>'define_color_indices( )'. This works properly if Suncore
>is run outside of the window system, but when run under
>the window system, '.cmapname' and '.cmapsize' of the

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'viewsurface' structure must be defined in order to
cooperate with the 'cmap' sharing of the window system.
Thus, if these two fields are not defined, you will not
be able to define your own colormap.

Reference Number: 1005351
Synopsis: The colormap passed to raster_to_file( ) must be integers.
Release: 3.2

Description:
Refer to the SunCore Reference Manual. The documentation
needs to explain that the map that is passed to
'raster_to_file( )' must contain an array of integers
ranging between 0 and 255. (Note that SunCore
wants its colormap to be an array of floats from
0 to .99.)

Reference Number: 1005905
Synopsis: SunCore Manual index does not list map_* functions
Release: 3.0

Description:
Refer to the SunCore Reference Manual, Rev. G of 2/86.
The index to the SunCore Reference Manual (Rev. G of 2/86)
does not list the following functions which appear on p. 38:

map_ndc_to_world_2
map_ndc_to_world_3
map_world_to_ndc_2
map_world_to_ndc_3

Reference Number: 1003037
Synopsis: WIN_RECT not well documented
Release: 3.2

Description:
The SunView Programmer's Guide does not clearly explain
that when the cursor is on the surface where drawing
occurs, if the 'pixwin' is locked with 'pw_lock',
sometimes the region in which the cursor rect resides
is not drawn to, or it is drawn to, but with the incorrect
op. This results in an empty region (16 x 16 pixels) to
when the cursor is moved.

Work around:
> Redisplay the image. When redisplayed, the image is
> put to the correct state.

Reference Number: 1003376
Synopsis: Missing footnote on p. 38 of 3.2 SunView manual
Release: 3.2

Description:
> In the SunView Programmers Guide, Part Number 800-1345-10,
> Revision A of 19 September 1986, the following sentence appears
> on page 38, referring the reader to footnote 9 (used after WIN_FONT):
> "Our example has specified a font by first opening the
> font with pf_open( ), then passing it into the panel 9
> as WIN_FONT."
> At the bottom of the page, there is no footnote 9.

Reference Number: 1003635
Synopsis: sunview doc: scrolling of non-retained canvases not discussed
Release: 3.2

Description:
> The SunView Programmer's Guide does not cover how an
> application would scroll in a canvas which has an
> idealized image space much larger than the visible space,
> but which does not use a retained backing pixrect to
> scroll around in. This application would have to do its
> own scrolling by asking the scrollbar how far to scroll,
> then update the canvas according to this new scroll
> into the idealized image space.

Reference Number: 1004111
Synopsis: buggy selection service example in SunView Sys Prog Guide
Release: 3.4

Description:
> The SunView Programmer's Guide, Revision A of 15 October
> 1986, page 120 contains the following code fragment as
> part of an example on how to read response buffers from
> the Selection Service.

```
if (*buffer->requester.context == 0) {
    if (buffer == (Seln_request *) NULL ||
```

This code does not check pointers for validity before
attempting to use the things they point to.

Reference Number: 1004161
Synopsis: doc omits info on reclaiming file descriptors
Release: 3.2

Description:
Refer to the SunView Programmer's Guide, Section 4.9,
File Descriptor Usage. Even though 'window_destroy()'
is called on a window, the corresponding file descriptor(s)
are not available for use until the notifier is called again.
This is not documented.
Work around:
The file descriptor associated with the window is not
reclaimed until the notifier has a chance to distribute
notifications again. This is because the function of
'window_destroy' simply asks the window owner if it
is willing to be destroyed, and then queues up a
notification to actually destroy the window. The
delay is meant to protect the program from destroying
a window that may be in a state of being accessed in
the current call stack. The user can work around this
restriction by calling 'notify_flush_pending' after
'window_destroy', assuming the user does not refer to
the window again.

Reference Number: 1004510
Synopsis: defaults_get_integer( ) arguments incorrectly described
Release: 3.2

Description:
Refer to the SunView Programmer's Guide, Rev. A of
19 September 1986, page 145. The arguments documented
for 'defaults_get_integer( )' are listed, in order, as
follows:

        char *, char *, 0

However, the arguments the function expects are as
follows:

        char *, int, int *

Not only should the second argument be an 'int', but the third
is a pointer to an 'int' whose use is not described in the
manual.

The same problem exists on p. 146 for 'defaults_get_integer_check()'.
The second argument is supposed to be an 'int', but is listed
as a 'char *'. The last argument is to be an 'int *', but is listed
as 0.

The Interface Summary on p. 150 has the second argument correct,
but glosses over the last argument.

Reference Number: 1004687
Synopsis: SunView doc: footnote on page 87 refers to nonexistent section
Release: 3.2

Description:
        Refer to the SunView Programmer's Manual, Revision A of
        15 October 1986, page 87, footnote 33. This footnote
        refers to the 'Input Control' section, a non-existent
        section of the SunView System Programmer's Guide.
Work around:
        This footnote should properly refer to Section 5.6,
        'Reading Input', of the SunView System Programmer's Guide.

Reference Number: 1004688
Release: 3.2

Description:
        The SunView Programmer's Manual should explain the relationship
        between 'window_read_event()' and 'input_readevent()', that
        being 'window_read_event()' basically just calls
        'input_readevent()'.

Reference Number: 1004829
Synopsis: pw_get_region_rect(), pw_set_region_rect() descriptions incorrect
Release: 3.2

Description:
        See the SunView Programmer's Guide, 15 October 1986. The
        return value of 'pw_get_region_rect()' on page 311 and
        'pw_set_region_rect()' on page 313 is documented to be
        a 'Pixwin *'. These both return an 'int -', which indicates

success or failure. For example, '-1' indicates a failure.
Work around:
The interfaces should be as follows:

```
int
pw_get_region_rect(pw, r)
      Pixwin *pw;
      Rect *r;

int
pw_set_region_rect(pw, r, use_same_pr)
      register Pixwin *pw;
      register Rect *r;
      int use_same_pr;
```

Reference Number: 1005228
Synopsis: win_get_tree_layer( ) interface incorrectly documented
Release: 3.4

Description:
Refer to the SunView System Programmer's Guide, Rev. A
of 15 October 1986, page 36. The interface description
for the SunWindows function 'win_get_tree_layer( )'
is documented as follows:

        win_get_tree_layer(windowfd,size,buffer)
        Window_handle   windowfd;
        int   size;
        Win_tree_layer   buffer;

This should properly be documented as follows:

        win_get_tree_layer(parent, size, buffer)
        Window_handle   parent;
        u_int   size;
        char   *buffer;

where 'buffer' is interpreted as (Win_enum_node *)
and 'size' is an unsigned 'int', instead of just an
'int'.

Reference Number: 1005704
Synopsis: SunView Programmer's Guide should mention max size of attr list
Release: 3.2

Description:
Refer to the SunView Programmer's Guide, part number 800-1345-10,
Chapter 17, Attribute Utilities.

The documentation does not indicate that the maximum number
of entries in an attribute list is 250.

Reference Number: 1006213
Synopsis: notify_next_destroy_func takes 2 arguments, not 4
Release: 3.2

Description:
Refer to the SunView Programmer's Guide, part number 800-1345-10,
page 298.

The synopsis listed for the 'notify_next_destroy_func' function shows four arguments, but it actually has only two arguments, as follows:

Notify_value
notify_next_destroy_func(client, status)
Notify_client   client;
Destroy_status   status;

Work around:
Refer to the example on Page 264 for correct usage.

Reference Number: 1006221
Synopsis: no description of textsw_replace_bytes() return value
Release: 3.4

Description:
Refer to the SunView Programmer's Guide, pages 120 and 328. The description for 'textsw_replace_bytes()' indicates that the function returns a value of type 'Textsw_index', but in neither case does it describe what this value means in terms of the 'textsw' or the call just completed.

Work around:
The return value is the net number of bytes inserted; the number is negative if the original string is longer than the one which replaces it.

Reference Number: 1006249
Synopsis: TTY_QUIT_ON_CHILD_DEATH description misleading
Release: 3.2

Description:
Refer to the SunView Programmer's Guide, part number 800-1345-10.

The description of the attribute 'TTY_QUIT_ON_CHILD_DEATH' reads as follows:

If TRUE, subwindow quits when its child terminates. Set only. Default: FALSE.

This leads one to believe that the tty subwindow is terminated when the child terminates. In fact, the entire window hierarchy terminates, as in the description for 'window_done()' on page 34.

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Work around:

Change the description to read as follows:

If TRUE, window_done( ) is called on the subwindow when
its child terminates.
Set only. Default: FALSE.

Reference Number: 1007069
Release: 3.4

Description:

Refer to the SunView Programmer's Guide. The description
for 'panel_text_notify( )' causes the action associated
with a panel text item event to happen. In reality, it
does not directly cause the action, but rather returns
a 'Panel_setting' enumeration that indicates the action
to be taken.

Work around:

Added paragraph to the panel chapter stating:
"If you do not specify your own notify procedure,
then the default panel procedure panel_text_notify( )
will be called at the appropriate time, as determined
by the setting of PANEL_NOTIFY_LEVEL. The procedure
is shown below:

Panel_setting
panel_text_notify(item, event)
Panel_item item
Event *event

This procedure returns a panel setting enumeration
which causes:

1) the caret to move to the next text item on
    RETURN or TAB;
2) the caret to move to the previous text item
    on SHIFT RETURN or SHIFT TAB;
3) printable characters to be inserted; and
4) all other characters to be discarded."

Reference Number: 1007175
Synopsis: want more documentation on canvas_event( )
Release: 3.2

Description:
> Refer to the SunView Programmer's Guide. It is not clear from
> the documentation that the 'locx' and 'locy' field values
> of the event argument are modified in 'canvas_event( )'.

Beginner's Guides

Reference Number: 1006015
Synopsis: /usr/lib/.textswrc does not corresond to documentation
Release: 3.4

Description:
> Refer to the Windows and Window-Based Tools: Beginner's
> Guide, part number 800-1287-03, pages 165-166.
>
> The definitions for the following function keys in
> '/usr/lib/.textswrc' are different from those described in
> the documentation, as follows:

Function Key	/usr/lib/textswrc definition	Documentation definition
R13	fmt	whenis -nw now
R14	[not defined]	fmt

Additionally, the documentation is missing some characters.

Function Key	What is missing
R1	"\fI" "\fP" should be added after insert_brackets
R2	"\fB" "\fP" should be added after insert_brackets
R3	"\fL" "\fP" should be added after insert_brackets
R5	add a \ before the (and the)
R6	add a \ before the " and the "
R7	"\s-2" "\s0" should be added after insert_brackets

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Reference Number: 1006214
Synopsis: .ttyswrc L1,L5,L6,L7,L8,L9,L10 not remappable is not documented.
Release: 3.0. 3.2

Description:
Function keys L1, L5, L6, L7, L8, L9, and L10 can not
be remapped in the '.ttyswrc' and 'textswrc' files.
Attempting the remap these keys will cause the following
error message to appear:

.ttyswrc error: L<key> cannot be mapped   (for .ttyswrc)
Work around:
1. 'shelltool(1)' man page. 3.2 man page, third paragraph under
'THE TERMINAL EMULATOR' should be added to to state that the
user cannot remap these keys.

2. Windows and Window Based Tools: Beginner's Guide - Chapter 16.
a. Page 159 - Add in explaining the '.ttyswrc error' error
message that you cannot remap the L1, L5 - 10 function keys.

b. Page 160 - In'describing the 'Format of the .ttyswrc File',
change from:
'A key must be one of: L1 through L15...'
to:
'A key must be one of: L2 through L4.'

c. Page 162 - The example should not contain remappings of L5,
L7, nor L9.

d. Page 163 - Re: 'Modifying Text Subwindow Behavior' 'Mapping
Filters or Functions to Keys', change from:
'You can bind filter to unused function keys, ..., L1 - L10.'
to:
'You can bind filter to unused function keys, ..., L2 - L4.'

CGI

Reference Number: 1003015
Synopsis: cgi doc: await_event IC_STRING example WRONG.
Release: 3.0, 3.2

Description:
Refer to the CGI manual, page 94.
The example program does not work correctly. This
example attempts to read a string from the keyboard.
The problems are as follows:

1.   The string returned by 'await_event()' is not
correct. It appears to be some other string in

the programs data.

2. The functions 'disable_events( )', 'dissociate( )',
    and release_'input_device( )' have passed the
    define 'IC_STRING', instead of 'devclass'.
3. The documentation for 'await_event( )' states
    that the user must supply a string to be
    copied into from the queue. The 'inrep'
    'ivalue' does not have a client 'char array'
    associated with it.

Work around:
Change the following lines

        disable_events(IC_STRING,devnum);
        dissociate(trigger,IC_STRING,devnum);
        release_input_device(IC_STRING,devnum);

to read

        disable_events(devclass,devnum);
        dissociate(trigger,devclass,devnum);
        release_input_device(devclass,devnum);

Add a declaration similar to

        char   result[256];

and change the line reading

        ivalue.string="This is a string";

to

        ivalue.string=result;

Reference Number: 1006620
Synopsis: cfreqinp( ) cgi fortran docs args in wrong order. trigger.
Release: 3.4

Description:
Refer to the Sun CGI Reference Manual (February 17, 1986),
page 168. The 'arg' list order for 'cfreqinp( )' is wrong.
The 'arg' list should read as follows:

integer function cfreqinp(devclass, devnum,
timeout, valid, trigger, x, y, xlist, ylist,
n, val, chioice, string, segid,pickid, f77strlen)
'f77strlen' is an 'int'.

Debuggers

Reference Number: 1004307
Synopsis: adb -w example on page 51 does not work
Release: 3.2

Description:
>   Refer to the Debugging tools fr the Sun Workstation
>   guide. The 'adb' '-w' option returns the following
>   error messages:

```
system>> more t2.c
char str1[] = "This is a character string";
int one = 1;
int number = 456;
long lnum = 1234;
float fpt = 1.25;
char str2[] = "This is the second character string";
main( )
{
        one = 2;
}
system>> adb -w a.out -
?l 'Th'
0
cannot locate value
$q
```

Reference Number: 1004454
Synopsis: dbx loses place if library module name is too long
Release: 3.2

Description:
>   Refer to the DBX User's Guide. When debugging a library
>   module using 'dbx', module names longer than 16 characters
>   will truncate, causing the 'dbx' to debug incorrectly.

Work around:
>   Shorten the name of the library module to 16 characters
>   or less.

Reference Number: 1006243
Synopsis: debugger document does not adequately describe dbxtool
Release: 3.4

Description:
>   Refer to Debugging Tools for the Sun Workstation, part number
>   800-1325-03.

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The documentation does not describe any of the new screen buttons for 'dbxtools'. For example, the <run> screen button is not described.

Editors

Reference Number: 1005555
Synopsis: trademark symbol \(tm does not work in troff
Release: 3.2

Description:
>Refer to Using nroff and troff on the Sun Workstation,
>February 17, 1986, page 188. The '\(tm' string listed
>in the table is not a 'troff' feature.

Reference Number: 1006060
Synopsis: the vi tagstack is not documented
Release: 3.2

Description:
>Refer to the Formatting Document on the Sun Workstation
>manual. The following 'tagstack' feature commands for
>'vi' are not documented anywhere.

>>set tagstack
>>pop
>><control>T

FORTRAN

Reference Number: 1003106
Synopsis: f77(1) claims f77 leaves .o files by default
Release: 3.0

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: 1004149
Synopsis: fortran maximum variable length undocumented
Release: 3.0

Description:
>The FORTRAN maximum variable length is not documented in
>either the Fortran Programmer's Guide or the Sun System
>Overview Guide. Note that this restriction only applies

to f77 Fortran, and not to SunFortran.

Work around:

The maximum length of an 'f77' variable must not
exceed 16 characters.

Reference Number: 1004386

Synopsis: documentation of double complex type incomplete

Release: 3.0, 3.2

Description:

Refer to the FORTRAN Programmer's Guide, page 87.
The following convention is incorrect:

A double complex version of each complex built-in
function is provided. The specific function names
begin with z instead of c.

The double complex version of 'aimag' is called
'dimag'. This routine returns a real so it uses
the real naming convention. The double complex
intrinsic may also be referenced by replacing the
'c' with 'cd' (e.g. 'cdsin') or the generic name
(e.g. 'sin').

Reference Number: 1005661

Synopsis: Fortran optimizers need for extra swap space not documented

Release: 3.2

Description:

Refer to the Floating-Point Programmer's Guide for the Sun
Workstation, part number 800-1552-10, page 4.

The FORTRAN optimizer, 'iropt', requires more than the standard
swap space. When insufficient swap space is available, 'iropt'
core dumps once it runs out of swap space. This requirement
does not appear in the documentation.

GKS

Reference Number: 1004809
Synopsis: gsetlinetype( ) is of type Glntype (not Gintype)
Release: 2.0beta

Description:
    Refer to the SunGKS Reference Manual, page 380.
    'gsetlinetype( )' is describes as type 'Gintype'.
    Instead, it should be of type 'Glntype'.

Reference Number: 1005951
Synopsis: set_workstation_window fortran binding in ndc coords not dc
Release: gks2.0

Description:
    Refer to the SunGKS Reference Manual, 2.0,
    in the 'Set Workstation Window' section,
    FORTRAN binding 'gswkwn( )' documentation states
    that the arguments 'XMIN', 'XMAX', 'YMIN', 'YMAX'
    are to be specified in 'DC' coordinates when, in
    fact, they are to be specified in 'NDC' coordinates.

Reference Number: 1006232
Synopsis: Several important functions missing from GKS Manual index
Release: gks2.0

Description:
    Refer to the SunGKS Reference Manual, revision A
    of 9 June 1987. The following function names are missing:

        ginqdet
        ginqsegpri
        ginqpatwidth
        ginqsegtran
        ginqviewport
        ginqwindow
        ginqvis
        INQUIRE DETECTABILITY
        INQUIRE SEGMENT PRIORITY
        INQUIRE SEGMENT TRANSFORMATION
        INQUIRE VISIBILITY

Work around:
    Add them into the index. Current page numbers are as follows:

    Function Name   Page Number

```
-------------                        -----------
ginqdet                              250
ginqsegpri                           250
ginqpatwidth                         215
ginqsegtran                          250
ginqviewport                         203
ginqwindow                           203
ginqvis                              250
INQUIRE DETECTABILITY                250
INQUIRE SEGMENT PRIORITY             250
INQUIRE SEGMENT TRANSFORMATION            250
INQUIRE VISIBILITY                   250
```

GP

Reference Number: 1005168
Synopsis: gp doc says gp works on 3/160M and 3/260M systems
Release: 3.4

Description:
Refer to the Sun Graphics Processor Software Interface
Manual, revision A of December 1986, page 3.
The following erroneous statement is written:

The GP enhances the performance of ... 3/160M ...
and 3/260M Workstations....

The GP only works with the 'cgtwo' framebuffer. The
'3/160M' and '3/260M' do not have this framebuffer.

Hardware

Reference Number: 1002933
Synopsis: undocumented diag behavior: now warns about SCSI reset
Release: 3.2

Description:
The documentation on 'diag' should be updated to
include the fact that currently the first words
'diag' prints after initialization indicate the
resetting of the SCSI bus. The documentation
currently incorrectly states that the first words
'diag' prints after initialization are as follows:

status: xxxx xxxx.

Network

Reference Number: 1003921
Synopsis: documentation problems with Networking Manual
Release: 3.2

Description:
    Refer to the Networking on a Sun Workstation Manual, page
    9, section "RPC Programming".
    The sample program will not compile as presented. The
    following lines must be added to make the program compilable:

```
#include <utmp.h>
#include <rpc/rpc.h>
```

Reference Number: 1004697
Synopsis: RPC Programming doesn't document some routines
Release: 3.2

Description:
    Refer to the RPC Programming Manual. The RPC Programming
    manual briefly describes the routines 'clnt_perror' and
    'clnt_perrno'. These routines work well in situations
    where it is desirable for a program to print a message,
    in a fairly standard format, to the standard output.

    However, if the program does not have a standard output (as
    a program running as a server), or if it does not just want
    the message to be 'printf'ed, or if it wants to use a
    different message format, the documentation is no help.
Work around:
    The following routines should be included for non-standard
    output:
        The routine 'clnt_sperror' takes the same arguments as
        'clnt_perror', and returns a pointer to a string which
        contains the message that 'clnt_perror' would print.
        (The message ends with a newline, so a client of
        'clnt_sperror' may have to strip the newline off.)
        'clnt_sperrno' has the same relationship to 'clnt_perrno'
        that 'clnt_sperror' has to 'clnt_perror' (newline and all).

Pascal

Reference Number: 1004063
Synopsis: pixrect doc: RT_BYTE_ENCODED format not explained
Release: 3.0, 3.2

Description:
> Refer to the Pixrect Reference Manual, version 17
> of February 1986. The exact format of the raster
> file type 'RT_BYTE_ENCODED' is not discussed. This
> information can only be found in source.

Work around:
> The following comments from 'pr_io.c' explains
> the current algorithm used to read/write rasterfiles
> in the 'RT_BYTE_ENCODED' format:

> The "run-length encoding" is of the form

> <byte><byte>...<ESC><0>...<byte><ESC><count><byte>...

> > where the counts are in the range 0..255 and
> > the actual number of instances of <byte> is
> > <count> 1 (i.e. actual is 1..256). One- or
> > two-character sequences are left unencoded;
> > three-or-more character sequences are encoded
> > as <ESC><count><byte>. <ESC> is the character
> > code 128. Each single <ESC> in the input data
> > stream is encoded as <ESC><0>, because the
> > <count> in this scheme can never be 0 (actual
> > count can never be 1). <ESC><ESC> is encoded
> > as <ESC><1><ESC>.

> This algorithm will fail (make the 'compressed'
> data bigger than the original data) only if the
> input stream contains an excessive number of
> one- and two-character sequences of the '<ESC>'
> character.

> #define ESCAPE   128   /* the <ESC> char mentioned above */

Reference Number: 1004566
Synopsis: Figure 4-1 is wrong in Pixrect Reference Manual
Release: 3.0, 3.2

Description:
> Refer to the Pixrect Reference Manual for 3.0, figure 4.1.
> All instances of 'PIX_SET' in this sample program should be
> replaced by 'PIX_SRC'.

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Reference Number: 1005525
Synopsis: pixrect doc: pr_makefun.c file out of date
Release: 3.0

Description:
Refer to the Pixrect Reference Manual, February 1986,
version A, Appendix A, 'Writing a Pixrect Driver', page
58. The 'pr_makefun.c' file should be updated as
follows:

```
        <<<from /usr/src/3.2/sun/usr.lib/libpixrect/pr_makefun.c>>>

        #include <pixrect/pixrect_hs.h>
        #include <sun/fbio.h>

        Pixrect *(*pr_makefun[FBTYPE_LASTPLUSONE])() = {
                bw1_make,
                cg1_make,
                bw2_make,
                cg2_make,
                gp1_make,
                0 /* bw3_make */,
                0 /* cg3_make */,
                0 /* bw4_make */,
                cg4_make
        };
```

Reference Number: 1006972
Synopsis: Pixrect dimension limitations not documented
Release: 3.0

Description:
Pixrects should not have 'x' or 'y' dimensions greater
than 32767. This limitation is not documented.

Program utilities

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

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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) bugs section should include ^Z (CTRL-Z) hangs windows
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: 1004132
Synopsis: missing line in Make documentation example
Release: 3.2

Description:
Refer to the Programming Tools Manual, page 62. The
example showing the 'Makefile' that is used to make
'make' is missing a line. The manual shows:

```
tags:  NOW
ctags *.[ch]

NOW:
      ;

$(GET) $(GFLAGS) -p s.$< > $<
```

Which fails when execute.
The correct version
should be:

```
tags:  NOW
ctags *.[ch]

NOW:
      ;

>>>   .DEFAULT:
      $(GET) $(GFLAGS) -p s.$< > $<
```

Work around:

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Replace the ';' which forms the action part of the NOW
rule with the word 'true' to get the 'tags' file built
as follows:

The correct version should be:

```
tags:  NOW
ctags *.[ch]

NOW:
      ;
```

>>>   .DEFAULT:
        $(GET) $(GFLAGS) -p s.$< > $<

Reference Number: 1004143
Synopsis: Example Makefile in Programming Tools buggy
Release: 3.2

Description:
        Refer to the Programming Tools Manual, page 62.
        The 'Makefile' used to run the sample 'make tags'
        has a bug in it, causing the attempt to run 'make
        tags' to produce the following error message:

```
system% make tags
;
sh: syntax error at line 1: 'end of file' unexpected
*** Error code 2

Stop.
system%
```

Reference Number: 1004381
Synopsis: lex manual description of redefining input, output wrong
Release: 3.2

Description:
        Refer to the LEX Manual, pages 128 and 132. The manual
        mentions that the macros input, output, and unput
        can be redefined if the use of 'stdin' and 'stdout'
        is not desired. This is not true.

Release Notes

Reference Number: 1005818
Synopsis: 3.4 Release Notes incorrect about manual pages supplied
Release: 3.4

Description:
Refer to the Sun OS Release 3.4 Release Notes. Appendix C
states that new manual pages are supplied, but are not on
tape, as follows:

> pack.1
> chmod.2
> readdir.3
> goban.6
> sticky.8

The following are on tape, but not mentioned in the
Release Notes:

> man.7
> graphics_demos.6

Reference Number: 1006891
Synopsis: Formatting errors in the Release 3.5 Manual (Rev 50)
Release: 3.5beta

Description:
Refer to the Release 3.5 Manual for the Sun Workstation, part number
800-2089-05, Revision 50 of 15 Sept 1987.

Pages 86, 88, and 89 have "$1 $2 $3 $4 $5 $6 $7 $8 $9" instead of
the appropriate text.

System Administration

Reference Number: 1000412
Synopsis: misleading info on restore in 2.0 Sys Admin manual, section 3.4.2
Release: 2.0

Description:
Refer to 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.

It is not indicated 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 a 126-blocking

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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 information to the mentioned section, such as
> the following:
>
> 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
```

> For a 1/4-inch tape drive (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
Release: 2.0

Description:
> Refer to the System Administration for the Sun Workstation
> manual, 'Tutorials' index tab, 'uucp Implementation Description',
> page 18, section 9.10, 'Device Types'.
>
> ACUHAYES is omitted from supported-device types from
> the table shown.

Work around:
> The table should include a line such as the following:
>
> ACUHAYES   Hayes Smartmodem 1200
>
> Additionally, a note should be included 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:
> Refer to the System Administration on the Sun Workstation,
> Release 3.0, 'Communication' chapter, pages 106-107.
>
> 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 at that time.

Reference Number: 1003024
Synopsis: "fsck: HOLD BAD BLOCK" message undocumented
Release: 3.2

Description:
> Refer to the Commands Reference Manual, part number 800-1295-04,
> the description for 'FSCK(8)'.
>
> The error message 'HOLD BAD BLOCK' is not documented and can be
> easily misunderstood. The term 'BAD BLOCK' implies that there
> is a formatting defect on the disk drive itself, but this is
> not neccessarily true.
>
> The error message appears when the status of a given inode
> is set to all ones. The check is as follows:
>
> $$((dp\text{->}di\_mode \ \& \ IFMT) == IFMT)).$$
>
> This doesn't imply disk damage, only file system damage. Thus,
> this message could be interpreted to mean that the user must
> reformat the disk, thinking that there is damage to the disk
> itself.

Work around:
> Respond to this message as any 'fsck' error by entering 'y'
> to reinitialize the inode to reasonable values. If it occurs

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over multiple 'fsck -y <filesystem>' calls, the message can
indicate actual disk damage; however, if the message does

Reference Number: 1003286
Synopsis: there should be a comment in uucp.h for UUDIR define
Release: all

Description:
>   Refer to the System Administration for the Sun Workstation
>   manual, page 316. A reference is made to 'UUDIR' being a
>   define in 'uucp.h'. 'UUDIR' is actually a 'CFLAG'.

Work around:
>   Refer to 'src/sun/usr.bin/uucp/Makefile' for additional
>   information on the format of 'CFLAGS' and 'UUDIR'.

Reference Number: 1003362
Synopsis: errors in sample printcap section of adding hardware chapter
Release: 3.0

Description:
>   Refer to the System Administration for the Sun Workstation
>   manual, Release 3.0, pages 160-161. In the sample 'printcap'
>   entry on page 160, the presence of both the 'fs/fc' values
>   and the 'xs' are incompatible. '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:
>   Refer to the System Administration for the Sun Workstation
>   manual. 'L.sys' lines have a 19-field limit, which is not
>   specified in the documentation.

Reference Number: 1003555
Synopsis: updates for 'Adding A Modem...' to 3.x kernel configuration
Release: 3.0

Description:
> Refer to the System Administration for the Sun Workstation manual,
> Revision B of 17 February 1986, Chapter 5, 'Adding Hardware To
> Your System', Section 5.4, 'Adding a Modem To Your System,'
> pages 151-152.
>
> The references to kernel configuration lines for the 'zs0' device
> are out of date. The manual shows the following line:
>
> > device   zs0 at mb0 csr 0xeec800 flags 0x3 priority 2

Work around:
> Use the current line from a Sun-3 3.x configuration file, as follows:
>
> > device   zs0 at obio ? csr 0x20000 flags 3 priority 3

Reference Number: 1003559
Synopsis: documentation needs to descrive uucp L.cmds problem
Release: 3.2

Description:
> Refer to the System Administration for the Sun Workstation
> manual. 'uucp' has a problem if it encounters white space
> in the 'L.cmds' file. If this white space is encountered,
> 'uucp' incorrectly parses the file and responds with the
> following error message to the 'LOGFILE':
>
> > PERMISSION (DENIED)

Reference Number: 1003587
Synopsis: '/etc/ethers' file not in TOC or index
Release: 3.0

Description:
> Refer to the System Administration fo the Sun Workstation
> manual, release 3.0. The '/etc/ethers' file description
> is not included in either the table of contents or the
> index.

Work around:
> This file is located in Chapter 2 on page 60.

Reference Number: 1006058
Synopsis: doc for increasing memory cache is incomplete
Release: 3.0

Description:
    Refer to System Administration for the Sun Workstation, part
    number 800-1323-03, page 208.

    The procedure described to increase the number of buffers
    for memory caching is incomplete, and appears as follows:

```
# adb -w /vmunix
nbuf?W 0t32
nbuf: 0 = 20
$q
```

Work around:
    Simply increasing 'nbufs' is not enough to increase memory
    cache. The documentation should be changed as follows:

```
# adb -w /vmunix
nbuf?W 0t32
nbuf: 0 = 20
bufpages?W 0t32
bufpages: 0 = 20
```

Reference Number: 1003256
Synopsis: "Configuring...Kernel doesn't describe device abreviations
Release: 3.2

Description:
    Refer to Installing UNIX on the Sun Workstation, Chapter 8,
    'Configuring the System Kernel'. No description is provided
    that covers the abbreviations used in a configuration file.
Work around:
    Refer to the file '/dev/MAKEDEV'.

Reference Number: 1004759
Synopsis: diag example for Adaptec disk drives incorrect
Release: 3.2

Description:
    Refer to the Installing UNIX on the Sun Workstation manual,
    part number 800-1521-05, Rev. A of 19 September 1986,
    page 13.

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The list of disk drives for the example (Adaptec ACB 4000)
is incorrect, as follows:

> 5 - Micropolis 1355
> 6 - Toshiba MK156F

The example also omits the "Other" selection.

Selection "3 - Fujitsu-M2243AS" is incorrectly shown
with a hyphen.
Work around:

Correct the list of disk drives for Adaptec ACB 4000)
as follows:

> 5 - Other

Correct the example for Selection 3 by replacing the
'-' with a space, as follows:

> 3 - Fujitsu M2243AS

Reference Number: 1005698
Synopsis: Need description of typical disk configurations for install
Release: 3.2

Description:
> Refer to the Installing UNIX on the Sun Workstation manual.
> The proper user responses to the 'diag' prompts 'Which
> target?' and 'Which unit?' prompts are unclear.

Work around:
> Refer to the following table:

DISK CONFIGURATION		TARGET	UNIT
1st SCSI disk in main pedestal	0	0	
2nd SCSI disk in main pedestal		0	1
SCSI disk in 1st shoebox	0	0	
SCSI disk in 2nd shoebox	1	0	
1st SMD disk on 1st Xylogics disk controller		na	0
2nd SMD disk on 1st Xylogics disk controller		na	1
1st SMD disk on 2nd Xylogics disk controller		na	1
2nd SMD disk on 2nd Xylogics disk controller		na	1

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Reference Number: 1002605
Synopsis: select(2) returns EINVAL on some large time intervals
Release: 3.2pilot

Description:
>Invocations of select with large values specified for a timeout
>(greater than x03ffffff) return EINVAL.
>This error should be mentioned under Errors in the Select(2) Man Page.

Reference Number: 1002963
Synopsis: getpwent(3) does not discuss yellow pages
Release: 3.0

Description:
>See the UNIX Interface Reference Manual, 15 April 1986, 'getpwent(3)'
>manual entry, page 198. The manual entry does not mention that
>'getpwent(3)' looks up entries in the yellow pages database, and
>interprets the ' ' automatically.

Reference Number: 1002991
Synopsis: shmop(2) man page: what addresses are illegal?
Release: 3.2

Description:
>The shmop(2) manual page doesn't say which shmaddr's are legal.

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: 1003140
Synopsis: stty has 16 undocumented options
Release: 3.2

Description:

> 134.5, 38400, LCASE, cols, columns, gspeed, noflsh, noisig, nopost,
> pass8, rows, size, stopb, 33, 35, and 05 are all undocumented
> options of stty. In particular, there is no workaround for certain
> telnet problems if one doesn't know about "rows" and "cols".

Reference Number: 1003208
Synopsis: tty(4) man page missing TIOC{G,S}SIZE and TIOC{G,S}WINSZ
Release: 3.2

Description:

> The tty ioctl's TIOCSSIZE TIOCGSIZE TIOCSWINSZ and TIOCSWINSZ
> are not documented in the tty(4) man page.
>
> These ioctls are used to get/set the size of the tty.
> Currently TIOCGSIZE is identical to TIOCGWINSZ.
> TIOC{G,S}WINSZ is part of 4.3, while TIOC{G,S}SIZE
> appear to be sun specific.

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: 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.

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Reference Number: 1003805
Synopsis: passwd(5) nor adduser(8) discuss legal uid and gid values
Release: 3.2

Description:
See the UNIX Interface Reference Manual, 19 September 1986,
descriptions for 'getgid(2)' on page 47, 'getuid(2)' on page 64,
and 'passwd(5)' on page 556; and the UNIX Commands Reference
Manual, 19 September 1986, description for 'adduser(8)' on
page 558. The documentation indicates that user ids and group ids
are both specified as non-negative 16-bit integers, but it does
not indicate what the legal range of values are.

Work around:
The values range from 0 through 32767, with the exception of
the special use '-2 nobody' user id.

Reference Number: 1004242
Synopsis: kadb doc weak for 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>", unless the following is done:

Enter the following:
> b kadb -d
After the messages appear, the following is returned:
kadb:
Enter the following, then press <CR>:
le(,,1)vmunix

Reference Number: 1004867
Synopsis: mailtool(1) should include mailtool limitations
Release: 3.2

Description:
The manual page for 'mailtool' should include the following:

The maximum number of folders is 200
The maximum number of mail messages is 1000

Reference Number: 1004885
Synopsis: namelist argument to scandir wrong on man page
Release: 3.2

Description:
>   The 'namelist' argument listed for 'scandir(3)' is wrong.
>   In the description, the type is described as 'a pointer to
>   an array of structure pointers.' In fact, the declaration
>   'struct direct *(*namelist[]);' is a declaration of an array
>   of 'dimension 0', whose elements are pointers to pointers
>   to structures.

Work around:
>   The correct declaration should be 'struct direct *namelist[];'.

Reference Number: 1005064
Synopsis: tar(1) manual page contains incorrect front speceifications.
Release: 3.2

Description:
>   In the 'tar(1) manual page, the 'X' option has two
>   incorrect instances of '\fb'.

Work around:
>   Change '\fb' to '\fB'.

Reference Number: 1005136
Synopsis: 3.3 routed man page missing -v option
Release: 3.3

Description:
>   The 'routed(8)' manual page is missing the '-v' option.

Reference Number: 1005158
Synopsis: popen fails to return NULL if process can't be started by shell
Release: 3.2

Description:
>   The documentation for 'popen(3S)' states that 'popen returns a
>   NULL pointer if the pipe or process cannot be created.'
>   This is incorrect; there is no way that 'popen()' can detect
>   this failure.

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Reference Number: 1005447
Synopsis: le(4) man page should be more informative
Release: 3.2

Description:
>   The 'le(4)' manual page description includes the following:

>>   le%d: Received packet with STP bit in rmd cleared This
>>   error ''should never happen,'' as it occurs only in conjunc-
>>   tion with a LANCE feature that the driver does not use.

>   This is not entirely correct; error messages can be caused by
>   having a packet on the net that is too long (over the
>   1518-byte maximum length).

Reference Number: 1005873
Release: 3.2, 3.4

Description:
>   The 'on(1)' and 'rexd(8)' manual pages do not mention that
>   NFS directories are mounted in '/tmp' in a directory named
>   'dbrexd'.

Reference Number: 1005931
Synopsis: rdist(1) man page does not describe opt_dest_name
Release: 3.2, 3.4

Description:
>   The 'rdist(1)' man page does not properly define how to use
>   the 'opt_dest_name' option of the "install" sub-command.
>   If the '<source list>' consists of a single normal file
>   name, 'opt_dest_name' must be the name of the target file
>   itself. If the '<source list>' consists of a single
>   directory name or multiple file names, however,
>   'opt_dest_name' must be the name of a target root directory.

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Reference Number: 1005429
Synopsis: bounds checking error messages have outrageous values
Release: fortran1.0beta
Release: 3.4

Description:
A -C option problem returns an inaccurate element number
in the error message that follows the code below:

```
system>> more t.f
        integer*4 i(10)
        j = 11
        i(j) = 1
        end
system>> f77 -C t.f
t.f:
 MAIN:
system>> a.out
Subscript out of range on file line 131120, procedure MAIN
Attempt to access the 251657577-th element of variable i.
IOT trap (core dumped)
```

Reference Number: 1005569
Synopsis: Backspace on empty file causes runtime core dump
Release: 3.4
Release: fortran1.0beta

Description:
    In the following code, a segmentation violation occurs
    at 'backspace' if the file did not exist before execution.
    If the file exists prior to execution, the program
    runs properly.

```
program test
integer iostat,recl,nextrec
logical exist,opened,named
character*30 name,access,form, blank
data x,y,mpf / 1.1,2.2,10/
open(unit=10,access='sequential',form='formatted')
write(mpf,200) x,y
inquire(unit=10,exist=exist,iostat=iostat,opened=opened,
1          named=named,name=name,access=access,
2          form=form,recl=recl,nextrec=nextrec,blank=blank)
print *, 'exist =',exist,'iostat = ',iostat,'opened =', opened,
1          'named =', named,'name =', name,'access =', access,
2          'form =', form,'recl =', recl,'nextrec =', nextrec,
3          'blank =', blank
backspace(mpf)
read(mpf,100) irwy
write(6,100) irwy
100   format(a3)
200   format(2f5.1)
      end
```

When the file is compiled and run twice, the following
is produced:

```
system>> f77 t.f
t.f:
 MAIN test:
system>> rm fort.10
rm: remove fort.10? y
system>> a.out
 exist =  t iostat =  0  opened =  t  named =  t  name =
 fort.10                   access =  sequential
 form =  formatted              recl =  0  nextrec =  0  blank =
 null
*** Segmentation violation
IOT trap (core dumped)
system>> a.out
 exist =  t  iostat =  0  opened =  t  named =  t  name =
 fort.10                   access =  sequential
 form =  formatted              recl =  0  nextrec =  0  blank =
 null
 1
system>>
```

Work around:
   Any one of the following three workarounds may be used.

   1) Use the 'fileopt' option to open the file at the end, rather
      than at the beginning.

      In the line:

         open(unit=10,access='sequential',form='formatted')

      Change as follows:

         open(unit=10,fileopt='eof',access='sequential',form='formatted')

   2) Make sure the file exists before execution of the program.

   3) Use 'rewind' instead of 'backspace'.

Reference Number: 1005803
Synopsis: wrong parts of strings in equivalences passed as parameters
Release: 3.2, 3.4, fortran1.0beta

Description:
The following code and compilation produces two files in the
directory: 'old.file' and 'XXX-------new.file'. The address
for 'all' ('all' 11) is pushed onto the stack prior to the
calls to both 'inquire' and 'open', rather than 'fn'. The
'inquire' fails because it is looking for the file named
'XXX------old.file', instead of 'old.file'. The 'open'
actually opens 'XXX-------new.file', instead of 'new.file'.

```
      program test
      logical lexist
      character pre*11,fn*20,all*31,cn*20,gn*31
      equivalence (all,pre), (all(12:),fn)
      data pre/'XXX--------'/
c
      fn = 'old.file'
      write(*,*) fn
      write(*,*) all
      cn = fn
      inquire(file=fn,exist=lexist)
      write(*,*) 'fn',fn,lexist
      inquire(file=cn,exist=lexist)
      write(*,*) 'cn',cn,lexist
c
      fn = 'new.file'
      open(unit=10,file=fn,status='new')
      inquire(unit=10,name=gn)
      write(*,*) fn
      write(*,*) gn
      close(10)
      stop
      end
```

Start with a file named 'old.file' in the directory.
```
system>> f77 -g t.f
 MAIN test:
system>> a.out
 old.file
 XXX--------old.file
 fn old.file          F
 cn old.file          T
 new.file
 XXX--------new.file
system>>
```

Work around:

Changing the 'fn' to 'all(12:)' in the 'open' statement allows the
program to create the proper file, 'new.file'.

It should be noted that the first 'inquire' does not seem
to find 'old.file' when 'all(12:)' and 'fn' are equivalenced
and 'old.file' does exist. However, the same 'inquire' statement
will find 'old.file' when the equivalance between 'all(12:)' and
'fn' is removed, or when 'all(12:)' is used instead of 'fn'.

Reference Number: 1006798
Synopsis: COMMON declaration ignored for certain records
Release: fortran1.0

Description:

Given a structure with an array field, such as the following:

```
structure /s/
integer x
integer y(5)
end structure
```

The record of that structure, declared 'COMMON', as follows:

```
record /s/ r(4)
common /com/ r
```

If the first reference in a subprogram to that record refers
to the entire array field, such as '... r(k).y ...', and that
first reference is in an actual argument list or an i/o list,
the compiler effectively ignores the 'COMMON' statement and
allocates the record in local storage in that subprogram.

Work around:

Insert a dummy reference to the record ahead of the reference
that provokes this problem.

Reference Number: 1007087
Synopsis: formatted writing of logical*1 variables does not work
Release: fortran1.0

Description:

The formatted writing of a 'logical*1' variable will always print
'T', even when the value to be printed is '.FALSE'.

Work around:

The problem can be remedied by using an unformatted write statement.

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Reference Number: 1007091
Synopsis: Can't take the loc( ) of a function in Fortran1.0
Release: fortran1.0
Release: fortran1.0

Description:
    The following code works properly with Release 3.4 Fortran, but
    not with Sun Fortran Release 1.0 (Fortran with VMS extensions):

```
system>> more t.f
        function x
        x = 1
        return
        end

        integer x
        external x
        y = loc(x)
        end
system>> f771.0 -v t.f
/usr/system/f771.0/usr/lib/f77pass1 "-P -mc68020 -fsoft" t.f /tmp/
f77pass1.19282.s.0.s /tmp/f77pass1.19282.i.1.s /tmp/f77pass1.19282.d.2.st.f:
x:
 MAIN:
"t.f", line 9: Error: "x" is used as a variable
rm /tmp/f77pass1.19282.s.0.s
rm /tmp/f77pass1.19282.i.1.s
rm /tmp/f77pass1.19282.d.2.s
system>>
```

Work around:
    Revert to Release 3.4 Fortran if VMS extensions are not needed.
    If VMS extensions are needed, replace all references to 'LOC'
    with references to, say, 'MYLOC', where 'MYLOC' is defined as
    follows:

    FUNCTION MYLOC(I)
    MYLOC = LOC(I)
    END

Reference Number: 1007114
Synopsis: Internal compiler error with -i2 flag.
Release: fortran1.0

Description:
> When compiling a program with the '-i2' option, the compiler
> sometimes aborts with the following message:
>
> compiler error: expression causes compiler loop: try simplifying

Work around:
> Compile the program without the '-i2' option. Any variables
> which need to be 'integer*2' can be explicitly declared.

Reference Number: 1007115
Synopsis: Compiler error with adjustable bounds dummy argument
Release: fortran1.0

Description:
> When compiling a subroutine which has a dummy argument array
> in which upper and lower bounds are dummy arguments, the compiler
> sometimes aborts with the internal error 'Impossible tag bad
> tag(65536) in routine frexpr':

```
SUBROUTINE BUG(N1,N2,ARR)
INTEGER*2 I1,I2,J, ARR(N1:N2)

IV = LIST(J)
END
```

Work around:
> Declare the array with a lower bound of 0, and subtract the original
> lower bound from each subscript reference, as in the following
> code:

```
SUBROUTINE BUG(N1,N2,ARR)
INTEGER*2 I1,I2,J, ARR(0:N2)

IV = LIST(J-N1)
END
```

Reference Number: 1007138
Synopsis: fortran1.05 does not accept -a compiler flag
Release: fortran1.05

Description:
    The f77 flag -a does not work with Fortran1.05 on sys4-3.2.

Reference Number: 1007141
Synopsis: Fortran1.05 does not handle commas in formatted input properly
Release: fortran1.05

Description:
    Commas in formatted input are not accepted by Sun Fortran1.05.

Reference Number: 1007166
Synopsis: Fortran1.05 has problems with bytes in structures
Release: fortran1.05

Description:
    Sun Fortran 1.05 has difficulty with 'byte' fields in structures.
    The 'byte' field can be at any level of nesting in the structure
    in order for this problem to occur.   This problem occurs only on
    Sun-4 machines running FORTRAN 1.05.
Work around:
    In some cases 'character*1' can be used instead of 'byte'.

Reference Number: 1007181
Synopsis: Complex mixed with double arithmetic broken
Release: fortran1.0, 3.4

Description:
    When compiling and running the following, complex arithmetic returns
    incorrect results.

```
complex c1,c2,c3
double precision d1
c1 = (1.0,0.0)
c2 = (0.0,1.0)
d1 = 1.0
c3 = c1 * c2 * d1
print *, c3
end
```

When compiled with either Fortran Release 3.4 or Fortran Release 1.0, the following is returned:

```
system>> a.out
( 0.,  0.)
```

The correct answer should be:

```
( 0.,  1.)
```

Work around:
Use parentheses around the (c2 * d1) to get the correct answer, or to replace 'd1' by 'cmplx(d1, 0.0)', which is what 'd1' should be converted to when a complex number is multiplied by a real or double precision number.

Reference Number: 1007374
Synopsis: -ansi does not catch 2 nonstandard constructs
Release: fortran1.0, 1.05

Description:
The '-ansi' option does not catch the following nonstandard statements:

```
program   - when a symbolic program name is not given
save n    - where 'n' is declared in a parameter statement
```

Reference Number: 1007544
Synopsis: Incorrect debug information for adjustable arrays.
Release: fortran1.0

Description:
The compiler generates incorrect debug information for adjustable array arguments. This causes dbx to use an incorrect value for the bounds of the array. This can be seen when compiling the following program with the '-g' option:

```
integer a(10)
call sub(a,10)
end
subroutine sub(ar,n)
integer ar(n)

write(6,*) ar
end
```

Attempting to run 'dbx' on the program produces the following result:

```
(dbx) stop in sub
(1) stop in sub
(dbx) run
Running: a.out
stopped in sub at line 7 in file "z.f"
    7        write(6,*) ar
(dbx) print ar
expression too large to evaluate
(dbx) whatis ar
(dummy argument) integer*4  ar[1:251657544]
```

Work around:

It is possible to print individual elements of a two-dimensional array in the following manner:

1) Calculate the position in linear memory of the element you want using this formula:

   ((col-1) * total_num_rows)   row

   For example, if you have an array ar(4,5), and you want to see ar(2,3), you would use this calculation:

   ((3-1) * 4)   2 = 10

2) Once this number is obtained, use this command in 'dbx' to print the element

   print ar[10,1]

   The '1' is necessary, because 'dbx' still thinks 'ar' is two-dimensional.

Reference Number: 1007592
Synopsis: fortran 1.0 and dbx can't agree on line numbering
Release: fortran1.0

Description:
    'dbx' gets out of sync listing line numbers in the following:

```
system>> more readu.for
    INTEGER*4 NUMBRS
       numbrs = 4
       end
system>> f77cvt readu.for
readu.for:
 MAIN:
system>> more readu.f
    integer numbrs
# 2 "readu.for"
    numbrs = 4
    end
system>> f771.0 -g readu.f
readu.f:
 MAIN:
system>> dbx a.out
Reading symbolic information...
Read 304 symbols
(dbx) stop in MAIN
(1) stop in MAIN
(dbx) run
Running: a.out
stopped in MAIN at line 2 in file "readu.f"
2   # 2 "readu.for"          <<why is this line listed at all?
(dbx) print numbrs
numbrs = 0
(dbx) step
stopped in MAIN at line 3 in file "readu.f"
    3        numbrs = 4      << according to dbx, our next step
                             << will assign 4 to numbrs
(dbx) print numbrs
numbrs = 4                   <<  But, it's already 4!
(dbx) quit
system>>
```

    'dbx' is executing the code as expected, but it does not
display it properly.

Reference Number: 1007752
Synopsis: Problems with -a option in mixed C and Fortran programs
Release: 3.4

Description:
    The following demonstrates several problems with using the '-a'
    option when compiling mixed C and FORTRAN programs under
    Release 3.4:

```
system>> more t.f x.c
::::::::::::::
t.f
::::::::::::::
      print *,'begin'
      call sub( )
      print *,'end'
      end
::::::::::::::
x.c
::::::::::::::
sub_(l)
{
      printf("sub\n");
      system("echo system");
      printf("end sub\n");
}
```

    These two cannot be compiled in one command, as shown in the
    following examples:

```
system>>f77 -a t.f x.c          (Release 3.4 FORTRAN)
t.f:
t.f:
 MAIN:
x.c:
ccom:can't open /tmp/ccom.7883.7.none
system>> f771.0 -a t.f x.c      (Sun FORTRAN Release 1.0)
t.f:
t.f:
 MAIN:
x.c:
Linking:
Undefined:
____tcov_init_func
____tcov_init
____bb_link
system>> cc -c -a x.c
ccom:can't open /tmp/ccom.8152.2.none
```

When they are compiled separately using Release 3.4 FORTRAN,
the output is incorrect, as shown below:

```
system>> cc -c x.c
system>> f77 -a -c t.f
t.f:
 MAIN:
system>> f77 -a x.o t.o
system>> a.out
  begin
sub
system
count: Could not open (null), errno 2
system>>
```

When they are compiled with Sun Fortran Release 1.0,
an 'a.out' is returned that executes the 'system' call,
but exits instead of returning, as shown below:

```
system>> cc -c x.c
system>> f771.0 -a -c t.f
t.f:
 MAIN:
system>> f771.0 -a x.o t.o
system>> a.out
  begin
sub
system
system>>
```

Reference Number: 1007866
Synopsis: FORTRAN does not handle assignments to logicial*1 or bytes correctly
    Release: fortran1.0

Description:
    'logical*1' and byte variables are assigned an incorrect value when
    they are used on the left hand side of an assignment statement.
    This is due to an inappropiate type conversion in the intermediate
    representation used by the compiler.

Converter

Reference Number: 1007578
Synopsis: assumed-size array of LOGICAL*1 as file specifier causes internal error
    Release: fortran1.0

Description:
    When the file specifier in an 'OPEN' or 'INQUIRE' statement is an
    assumed-size array of type 'LOGICAL*1', the converter fails with
    an internal error, as in the following example:

```
system>> cat test.vf
        subroutine unsdall(docnam)
        logical*1 docnam(*)
        logical ex
        inquire(file=docnam, exist=ex)
        end
system>> f77cvt test.vf
test.vf:
        unsdall:
Translator error line 4 of test.vf: logic error in translator
```

Work around:
    Change the 'LOGICAL*1' declaration to 'CHARACTER*1'.
    (see description)

Documentation

Reference Number: 1006721
Synopsis: Example progs on Page 70 and 72 of Fortran Guide have typos
Release: 3.4

Description:
    Refer to the Fortran Programmer's Guide. The C language 'printf'
    statements in the example programs shown on pages 70 and 72
    show '0's (zeros) in places which should properly show '"'s
    (double quotes).

sun
microsystems

Library

Reference Number: 1006296
Synopsis: fortran rindex library function broken
Release: fortran1.0beta

Description:
Fortran 'rindex' always returns zero, no matter what the real
answer is. The following demonstrates the problem:

```
t.f--------
      external rindex
      integer rindex
      integer j
      character string*10,substring*1
      data substring /'4'/, string /'1234567890'/
      write (6,*) string , substring
      j = rindex(string,substring)
      write (6,*) j
      end
muse>> f77 t.f
t.f:
 MAIN:
muse>> a.out
  1234567890  4
  0
```

Fortran rindex always returns zero no matter what the real answer is.
```
t.f--------
      external rindex
      integer rindex
      integer j
      character string*10,substring*1
      data substring /'4'/, string /'1234567890'/
      write (6,*) string , substring
      j = rindex(string,substring)
      write (6,*) j
      end
system>> f77 t.f
t.f:
 MAIN:
system>> a.out
  1234567890  4
  0
```

Reference Number: 1006718
Synopsis: You can no longer print control-characters
Release: 3.4

Description:
Control characters can no longer be printed in a character
string. For example, the following program will print a '^@'
inside the file named 'output'.

```
open(8,file='output')
write(8, *) "^C"
end
```

where '^C' is Control-C.

Work around:
The following modifications can be used:

```
        i = 3
        open(8,file='output')
        write(8, 100) i
100     format(a)
        end
```
'f77cvt' should 'know' that '"377' is going into a byte
variable, and should interpret it as '-128' (or something
like that). The VAX does this 'correctly', and a 'j'
will be seen as a negative number. We show 'j' as
'out of bounds' (255), as shown below:

```
::::::::::::::
t.vf
::::::::::::::
        byte j
        j = "377
        write (*,10) j
10      format(5x,o6)
        end
::::::::::::::
t.f
::::::::::::::
    logical*1 j
# 2 "t.vf"
    j = 255
    write(unit=*, fmt=10) j
  10 format(5x,o6)
    end
system>> a.out
    ******
system>>
```

The problem exists in Fortran formatted output. 'f77cvt'
correctly translates the octal integer constant '"377' into
255 decimal. Fortran performs the assignment correctly;
if you print 'j' using an 'I' format, instead of 'O', it's ok.

Reference Number: 1007613
Synopsis: OPEN statement core-dumps if compiled with -i2 flag.
Release: fortran1.05

Description:
> Execution of an 'OPEN' statement compiled with the '-i2'
> flag in effect results in an illegal instruction failure and
> core dump, as shown in the following:

> system: /home/rogue/deg/fortran/tests 46 cat i2open.f
> > program i2open
> > open(unit=5)
> > end
> system: /home/rogue/deg/fortran/tests 47 f77 i2open.f
> i2open.f:
> MAIN i2open:
> system: /home/rogue/deg/fortran/tests 48 a.out
> system: /home/rogue/deg/fortran/tests 49 f77 -i2 i2open.f
> i2open.f:
> MAIN i2open:
> system: /home/rogue/deg/fortran/tests 50 a.out
> open form=: [121] illegal argument
> logical unit 5, named 'fort.5'
> Illegal instruction (core dumped)

Work around:
> Instead of using the '-i2' flag, explicitly declare
> all INTEGER variables that must be two-byte integers
> as INTEGER*2.

Graphics

Graphics
CGI

Reference Number: 1004356
Synopsis: cgipw_inquire_drawing_mode undefined
Release: 3.2, 3.4beta

Description:
> The routine 'cgipw_inquire_drawing_mode' is documented on page
> 146 of the 3.0 SunCGI Reference Manual. However, the routine is
> not defined in the library.

Work around:
> Use 'inquire_pixel_array' instead.

Reference Number: 1004367
Synopsis: cgipw_inquire_pixel_array undefined
Release: 3.2, 3.4beta

Description:
> The routine 'cgipw_inquire_pixel_array' is documented on page
> 146 of the 3.0 SunCGI Reference Manual. However, the routine is
> not defined in the library.

Reference Number: 1005331
Synopsis: bottom borders of CGI rectangles are drawn too low
Release: 3.4

Description:
>   The clip rectangle is computed incorrectly when setting the
>   VDC extent via 'vdc_extent( )'. The bottom of the rectangle
>   is one pixel lower than the intended clip boundary. This
>   problem is only seen when the extent is set to match
>   pixels or smaller.

Work around:
>   Adjust the bottom edge of the rectangle up a distance equal
>   to the width of the line being used to draw the rectangle.
>
>   Additionally, 'NOCLIP' may be set using 'clip_indicator( )',
>   being careful not to exceed the bounds of the actual rectangle.

Reference Number: 1005608
Synopsis: cgipw does not clip polymarkers correctly.
Release: 3.4

Description:
>   If polymarkers are drawn using 'cgipw' on a canvas that is not
>   displayed, one of the polymarkers gets clipped out when it
>   should not. This only happens if the height of the
>   frame the canvas is positioned in is smaller than 179 pixels,
>   and only if the drawing is done before 'window_main_loop'
>   is called.

Reference Number: 1006073
Synopsis: circular_arc_center draws arc in wrong direction
Release: 3.2. 3.4

Description:
>   Circular arcs drawn using 'circular_arc_center' are drawn
>   in a clockwise manner, instead of counterclockwise (as
>   described in the SunCGI Reference Manual, part number
>   800-1256-03).

Work around:
>   Exchange c2x, c2y for c3x, c3y in 'circular_arc_center'.

Reference Number: 1006079
Release: 3.2. 3.4

Description:
'circular_arc_center_close()' should draw the perimeter around the
pie. This step is not done correctly. In 3.2, the perimeter is not
drawn around the filled area. In 3.4, the perimeter of the cutout
is translated approximately 75 pixels to the right.

f77SunCore

Reference Number: 1007152
Synopsis: fails to find library functions with 16-letter names
Release: fortran1.0

Description:
The fortran compiler is unable to resolve the following 16
character routines from the FORTRAN SunCore library:

setvertexindices
setviewplanedist
initializevwsurf
setshadingparams
setviewplanenorm
setpolyintrstyle

An error message such as the following appears:

Undefined:
initializevwsurf

SunCore

Reference Number: 1000905
Synopsis: SunCORE: text does not transform correctly
Release: 2.0, 3.2

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: 3.0

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: 1002861
Synopsis: suncore: XORROP rasterop primitives are not deleted correctly
Release: 3.2

Description:
Primitives drawn with the XOR 'rasterop' that intersect
other primitives will not be erased correctly when the
segment is deleted. This could also happen if hidden
surface removal is enabled.
Work around:
Call 'new_frame()' after a segment is deleted.

Reference Number: 1003703
Synopsis: suncore: only allows 20 fds
Release: 3.2, 3.4

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: inqcurrpos2 fails for SunCore called from Pascal
Release: 3.2

Description:
>   In SunCORE called from Pascal, inqcurrpos2 fails and causes the
>   application to core dump with a memory fault. However,
>   calls to inqcurrpos3,passing in a dummy variable as the third
>   parameter.

Work around:
>   Always use inqcurrpos3.

Reference Number: 1004254
Synopsis: await_any_button_get_locator_2( ) returns incorrect location.
Release: 3.0, 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.

Reference Number: 1005073
Synopsis: restore_segment( ) does not work with shaded polygons.
Release: 3.2

Description:
>   Saving a polygon that has been shaded with either the 'gouraud'
>   or 'phong' shading techniques will not come back to it's original
>   state if saved and restored with 'save_segment( )' and
>   'restore_segment( )', respectively.

Work around:
>   Create a shaded segment before doing the restore.
>   You have to use the same type of shading as the
>   restored polygon uses.

Reference Number: 1006636
Synopsis: Initializing cg2dd view surface sometimes fails.
Release: 3.2

Description:
   When using raw cg2dd, suncore occasionally gets a segmentation
   fault during initialization.

Reference Number: 1007056
Synopsis: SunCore pascal wrapper inqcolorindices does not work
Release: 3.2, 3.4

Description:
   When running a Suncore pascal application, 'inqcolorindices( )';
   the color indices are always returned as 0.999.

Reference Number: 1007205
Synopsis: set_locator_2 does not work.
Release: 3.4

Description:
   Suncore does not allow the program to set the mouse postion
   with 'set_locator_2( )'.

Reference Number: 1007834
Synopsis: SunCore should report programs which exceed GP limitations
Release: 3.2, 3.4, 3.5beta

Description:
   Most people are unaware that SunCore will not draw polygons
   with more than 400 edges on GP view surfaces. When SunCore
   becomes aware that the polygon is not going to be drawn, no
   error or warning message is issued.
Work around:
   In the user program, break polygons that have more than
   180 edges (200 w/o GP) into several polygons before drawing them.

GP

Reference Number: 1004863
Synopsis: GP1_PR_PGON_TEX problem.
Release: 3.2

Description:
    When using GP1_PR_PGON_TEX to draw polygons, the polygons get drawn
    incorrectly on the GP when part of the polygon intersects the
    left edge of the screen (NOT the window). If a window goes from
    100 to 400 in X, any polygons that have coordinates of less than
    -100 (the edge of the physical screen) get clipped incorrectly
    (they are pushed to the right). The scan lines used to fill the
    polygon are the correct length, just moved to the right.
    Polygons that fit on the physical screen are clipped correctly
    to the window boundary; only those that if not clipped would
    extend off the physical screen are affected.
Work around:
    Clip polygons to the screen in applications, and supply a
    negative 'x' component in the 'sx' field

Pixrects

Reference Number: 1005215
Synopsis: pw_getattributes( ) returns differently on cgfour
Release: 3.2

Description:
    The 'pw_getattributes( )' call can return a different value for
    planes when running on the 'cgfour' than it does for the
    'cgtwo'. In particular, on 'cgtwo' it will return 0xf for a
    colormap segment of size 16, but on cgfour it gives 0x400000f.
Work around:
    Mask out any bits above 255 (ff).

Kernel
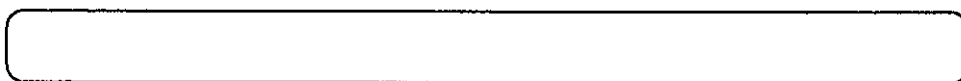
Kernel
Driver

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: 1004247
Synopsis: cmdtool: does not always echo shell prompt
Release: 3.4beta

Description:
    The shell prompts in a cmdtool are not always echoed. This happens
    primarily when hitting the RETURN key quickly, or holding it down.
    The prompts that are echoed do not match the number of times RETURN
    is hit.

Reference Number: 1006666
Synopsis: silo overflows from mouse
Release: 3.4

Description:
    When running various applications (such as drawing
    menu-driven rectangles using a CAD window) silo
    overflows from the mouse sometimes occur. After
    the first overflow, each mouse movement produces
    another silo overflow. Since the mouse input

continues to produce silo overflows, the user cannot
exit and must abort using <L1><a>. A 'silo overflow'
message indicates the one-character silo in the
SCC had not been emptied before a new character
arrived.

Reference Number: 1006805
Synopsis: Attempt to read less than tape block size fails with EIO
Release: 3.4

Description:
If one attempts to read less than a block of data from a 1/2"
tape drive, the read fails with 'errno' set to EIO.

Reference Number: 1006977
Synopsis: system core dumps to some SCSI disks consistently fail
Release: 3.2, 3.4, 3.5beta

Description:
Some systems with SCSI disks can never successful dump core to the
swap partition, either after a panic or from the PROM monitor with
the 'g0' command. The error messages received are:

dumping to dev 701, offset NNNNN
dump i/o error

Reference Number: 1007411
Synopsis: etherfind does not see outgoing packets
Release: 3.2

Description:
'etherfind' does not see outgoing packets.
Work around:
Run 'etherfind' from another machine.

Reference Number: 1007524
Synopsis: xy and xd watchdog routines incorrect
Release: 3.2, 3.3, 3.4, 3.5

Description:
    The 'watchdog' timeout routines for both the 'xy' and 'xd'
    drivers have a subtle error which causes needless resets
    to the controller as well as extraneous 'lost interrupt'
    errors.

Reference Number: 1007745
Synopsis: crash dumps broken
Release: 3.5

Description:
    During a crash-dump of 3.5, the console prints the
    following message, then locks up:

        Exception 7c at f0043f4

General

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: 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: 1002756
Synopsis: zs interrupts invisible to perfmeter
Release: 3.0

Description:
>   Many on-board 'zs' serial chip (Zilog 8530 SCC) interrupts are
>   not counted by the kernel. Thus, these are not displayed by the
>   'perfmeter'.

Reference Number: 1002765
Synopsis: some ioctls in ioctl.h do not exist
>   Release: 1.1

Description:
>   Some of the 'ioctls' defined in '/usr/sys/h/ioctl.h' do not exist,
>   and have not existed in Sun code since Release 1.1. Examples of
>   some of these are as follows:

>   #define TIOCMODG   _IOR(t, 3, int)   /* get modem control state */
>   #define TIOCMODS   _IOW(t, 4, int)   /* set modem control state */

>   Some of the 'TIOCM_xxx' 'icotls' may also not exist, most notably
>   'TIOCM_CTS' and 'TIOCM_DSR'. The contents of the header files in
>   the system is not documentation for what is supported in the system.
>   The supported interface is described in the manual set, which is
>   why these 'ioctls' are not described in the manuals.

Reference Number: 1002853
Synopsis: tar I tar, disk-to-disk on same xy450, crashes system
Release: 3.0, 3.2, 3.4beta

Description:
>   Performing a tar I (cd /fu/bar; tar) when the first directory is
>   on one disk and /fu/bar is on another disk (and both disks on the
>   same controller) crashes the system.
Work around:
>   If hardware and slots are available in the cardcage, put the disks
>   on separate controllers.

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Reference Number: 1002976
Synopsis: Socket application causes system to panic.
Release: 3.0, 3.2

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, 3.4

Description:
> Installation of 3.2 on a fileserver with SMD disk(s) appears to
> succeed, but after completing setup, the reboot hangs after the
> using 95 buffers containing 778240 bytes of main memory
> message. Eventually the console displays 'no space' messages.
> While the system is in this 'hung' state, the CPU diagnostic LEDs
> cycle extremely slowly.

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: 1005731
Synopsis: kernels larger than 0xa0000 will not boot successfully
Release: 3.2

Description:
> Kernels larger than the value 'BRELOC 0xa0000' as defined in
> 'sun/sys/sunstand/Makefile.sun3' will not boot successfully,
> or may hang in strange ways due to uncleared 'bss'. Thus,
> kernels whose '_end' is past 'BRELOC' have this problem.

Work around:
> If source is available, redefine 'BRELOC' as 0xb0000,
> then re-make the boot program.

Reference Number: 1006348
Synopsis: termio.h missing from /usr/include
Release: 3.4

Description:
> The file '/usr/include/termio.h', mentioned on the man
> page 'termio(4V)', is not in the 3.4 release. Without this
> file, the user is unable to write code to manipulate
> pseudo terminals.

Reference Number: 1006502
Synopsis: profiling not turned off by execve
Release: 3.2

Description:
> Profiling does not get turned off by an 'execve', thus allowing
> for problems to develop when a non-profiled program is 'exec'ed
> by a profiled program. Specifically, the bss value of the
> non-profiled program is not zero at startup.

Reference Number: 1006702
Synopsis: application crashes 3/200 series kernel
Release: 3.2, 3.4

Description:
> When running certain applications using shared memory on a
> Sun-3/200, writeback errors occur and the system crashes,
> producing the following error message:

Memory Error Register d4<INTR,INTENA,CE_ENA,WBACKERR>
DVMA = 0, context = 1, virtual address = 2a1fa0
pme = 43000000, physical address = 1fa0
panic: writeback error
syncing disks... 11 11 9 5 done

Reference Number: 1007555
Synopsis: readv/writev broken in physio
Release: 3.4

Description:
>   The scatter/gather read/write system calls 'readv( )' and 'writev( )'
>   do not work with more than one I/O vector to any device that
>   uses the kernel routine 'physio( )' to handle I/O from the
>   user process.

Syscall

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(l));
fcntl(fd,F_SETFL,FASYNC);
```

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

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: 1002828
Synopsis: user program panics the system
Release: 3.0

Description:
   A user program with "user errors" causes the system to panic
   (Bus Error).

Reference Number: 1003135
Synopsis: "panic: mfree" with AF_UNIX SOCK_STREAM OOB data
Release: 3.2, 3.4

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: 1003349
Synopsis: execv( ) causes exec: EFAULT panic
Release: 3.2, 3.4beta, 3.4

Description:
   The following program will cause the kernel to panic with
   'exec: EFAULT':

```
#define KILL
main( )
{
        int pid, fpd[2];

        pipe(fpd);
        switch (pid = fork( ))
        {
           case 0:
#ifdef KILL
                execv("/usr/ucb/whoami");
#else !KILL
                execv("/usr/ucb/whoami",0);
#endif KILL
                break;
            default:
                break;
        }
}
```

Note that the call to 'execv( )' is incorrect, since the
'argv' parameter is missing, but this should not crash
the system.

Reference Number: 1004002
Synopsis: *crfreelist in kern_prot.c gets trashed.
Release: 3.2, 3.3, 3.4

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: 1004193
Synopsis: A directory with a hard link cannot be removed.
Release: 3.2, 3.4

Description:
If a hard link exists to a directory (which only the super user
can create), it is impossible to remove either the original
directory or the directory which is linked to it. 'rmdir'
returns the following error message:

directory not empty

'/bin/rm -r' returns the the following message:

not removed

This is because the link count for this inode is 3, because
of the hard link. The kernel explicitly checks for a
link count == 2 before it removes a directory.

The 'unlink(2)' system call also fails to remove the
offending directory, failing with 'errno=EPERM', even if
executed by 'root'.

Work around:
Use 'clri(8)' to clear the inode corresponding to the linked
directory; then reboot the system, allowing 'fsck(8)' to clean
up any inconsistencies.

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Reference Number: 1005116
Synopsis: writes to a pipe are not atomic
Release: 3.2

Description:
A kernel bug occurs in the following scenario:
A process writes to a pipe. The pipe becomes full, so the process
sits in 'write(2)'. Then the process receives a signal. The signal
handler also writes to the pipe. When a second process tries to
read from the pipe, it gets garbage. The signal handler should not
have been able to write to that pipe, because it was full.

The problem appears to be that writes to pipes are not necessarily
atomic. Data from a write issued by one process may be interleaved
with data written by another process.

Reference Number: 1005223
Synopsis: I/O from shared memory to raw disk produces inconsistent data
Release: 3.2

Description:
Raw I/O to disk from shared memory produces inconsistent data on
Sun-3/260 and Sun-3/280 systems, but works properly on Sun-3
systems without caches.
Work around:
Use block disk device, rather than raw disk device. An alternative
is to move data from shared memory area to regular memory; then do an
I/O from regular memory to raw disk device.

Reference Number: 1005375
Synopsis: hard link to current directory hangs forever
Release: 3.3, 3.4

Description:
Attempting to make a hard link to the current directory (.)
causes the command in question (either 'ln -f' or '/usr/etc/link')
to hang until reboot. Additionally, attempts to access the
directory involved also hang.
Work around:
Do not attempt to link a directory which you are currently in.

Reference Number: 1006053
Synopsis: cannot shmat(2) large (8 Mbyte) shared memory segments
Release: 3.2, 3.4

Description:
>   'shmat(2)' of 8 Mbyte shared memory segment fails with 'ENOMEM'
>   after a successful 'shmget(2)', despite the fact that there is
>   adequate physical memory and adequate swap space.

Reference Number: 1006082
Synopsis: acct(2) doesn't log useful info in ac_utime and ac_stime.
Release: 3.2

Description:
>   The times logged by 'acct(2)' into '/usr/adm/acct' are mostly zeros
>   for accounting user time 'ac_utime', and accounting system time
>   'ac_stime'.

Reference Number: 1006102
Synopsis: select(2), recv indicate out of band data remains pending on socket
Release: 3.2

Description:
>   'select(2)' indicates that an exceptional condition remains
>   pending on an Internet domain stream socket after having
>   'recv(2)'-ed the out-of-band data. Another 'recv(2)' of
>   out-of-band data on that socket returns the original
>   message again. A 'recv(2)' of normal data after a
>   'recv(2)' of the out-of-band data clears up this problem.
>
>   The problem is that TCP does not really support "out of band"
>   data, but instead has an 'urgent marker'. It does seem that
>   there is a bug with 'select' saying that there is an 'exceptional
>   condition', when no such condition exists. This depends on
>   interpretation: for example, if the 'exceptional condition'
>   is unread OOB, or if you are 'at the mark' of the urgent pointer.

Reference Number: 1006226
Synopsis: des_crypt panics kernel if /dev/des but no DCP chip
Release: 3.4

Description:

On many Sun-3 machines which do not have a DCP encryption chip
installed, if either run 'des(1)' is executed, or if '/dev/des'
exists and 'des_crypt(3)' is called, the kernel panics.
Work around:

Do not make a '/dev/des' unless a DCP encryption chip is
installed, and the kernel knows about it. If the kernel knows
about the chip at boot time, the following message appears:

des0 at obioXXXXX

Reference Number: 1006940
Synopsis: select on FIFO should return read instead of exception
Release: 3.4

Description:

FIFO select should return a read condition, rather than
an exceptional condition, when a connection is shut down.

Reference Number: 1006954
Synopsis: Kernel panic (bus error) when tracing
Release: 3.4

Description:

When killing a process being traced that is in the middle of I/O,
a 'panic: bus error' results.

SunINGRES

SunINGRES
Documentation

Reference Number: 1000951
Synopsis: no documentation on enviroment variables ING_BACKEND and
Release: 2.0

Description:
>There is no documentation about the enviroment variables
>ING_PRINT and ING_BACKEND.

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 the following:
>>report mydb myrep '(sal=10000,dept=toy)'

Reference Number: 1000993
Synopsis: Equel program name length
Release: 2.0/23se27

Description:
>Equel 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: 1002666
Synopsis: C variables in an equel program are limited to 12 characters
       Release:ingres3.0

Description:
       If C variables are longer than 12 characters, the EQUEL preprocessor
       'eqc' produces faulty code in the resulting '.c' file.

Reference Number: 1004121
Synopsis: equel documentation says iiseterr and it should be IIseterr
Release: suningres3.0/25

Description:
       The equel/C manual (p. 3-3 to 3-5) discusses the Ingres routine
       iiseterr. This is incorrect. It should be IIseterr.

Reference Number: 1004487
Synopsis: Section 7.6 of Ingres/EQUEL/C User's Guide is incorrect
Release: suningres5.0

Description:
       The 'cc' line in section 7.6, p. 7-6 of the SunINGRES/EQUEL/C
       User's Guide is incorrect. The line currently reads as
       follows:

       cc -I ingres/lib filename

Reference Number: 1005008
Synopsis: The Installation Manual and the RTF have incomplete /etc/rc entry
Release: suningres5.0

Description:
       The Installation Manual and the RTF which contains some of the
       corrections for the /etc/rc entry for the lock daemon are
       incomplete. The complete entry should read:

```
# start the SunINGRES lock manager.
ING_HOME=/usr/prod/other/50/ingres; export ING_HOME
/usr/prod/other/50/ingres/bin/lockmgr    2> /dev/console
echo "SunINGRES lock manager started"
```

Reference Number: 1005014
Synopsis: Section on Installing the lock daemon doesn't mention file use.daemon
Release: suningres5.0

Description:
    The section titled 'Installing the SunINGRES lock daemon'
    (section 3.4) of the SunINGRES Installation Guide
    should mention that the file 'use.daemon' must be present
    in the directory ' ingres/files' if one is to use the the
    lock daemon instead of the lock driver or instead of using
    'single user' mode.

Reference Number: 1006460
Synopsis: Documentation unclear about setting the editor in terminal monitor
Release: suningres5.0

Description:
    The Ingres documentation does not clearly state how to set
    up the editor to be '/usr/ucb/vi' when invoked by the terminal
    monitor with '\'.
Work around:
    Tell Ingres how to determine which editor to use from the
    terminal monitor by setting 'ING_EDIT' to '/usr/ucb/vi' in
    ' ingres/files/symbol.tbl' and making sure that the following
    line is in ' ingres/files/startup':

        {define; {editor}; /usr/ucb/vi}.

Reference Number: 1006476
Synopsis: Substring does not work in the QUEL Ingres Terminal Monitor.
Release: suningres5.0

Description:
    Refer to the QUEL Reference Manual, page 1-20. The substring
    function as described does not operate correctly on character or
    text data correctly in the QUEL Ingres Terminal Monitor.
    If the syntax described on this page is followed, the
    following error message appears:

    2601:line 2, Syntax error on ',', the correct syntax is:
    RETRIEVE [[INTO] [locationname:]tablename] [UNIQUE] (target_list)
        [WHERE qual] [SORT [BY]
        columnname1 [:sortorder] {, columnname2 [:sortorder]}]
    RETRIEVE UNIQUE (target_list) [WHERE qual] [SORT [BY]
        columnname1 [:sortorder] {, columnname2 [:sortorder]}]

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Work around:
>   Perform the query statement under Ingres 3.0.
>
>   You must turn on the macro facility before you use the substring
>   function (since it is really a macro). This can be done by typing
>   macro to the terminal monitor.

Reference Number: 1006865
Synopsis: Documentation is unclear on installing INGRES/NET
Release: suningres5.0

Description:
>   Section 2.5.1 item 8 of the Installation Guide, should state
>   that each user on the client needs to have a home directory
>   on both the server and the client machines.

Reference Number: 1006866
Synopsis: password entry required when running ingnetdef.
Release: suningres5.0

Description:
>   In section 2.5.2 item 5, Run ingnetdef, of the Installation
>   Guide, the documentation does not state that the password
>   must be entered.

Reference Number: 1006876
Synopsis: Documentation is unclear on installing SunIngres/net.
Release: suningres5.0

Description:
>   Section 2.5.1, item 5, of the Installation Guide should be
>   changed to the following:
>
>   "There is an entry in the '/etc/passwd' file for each
>   user on the client machine who wishes to access data
>   on the server. If all the desired users on the client
>   machine are in the yellow page, the single entry ' '
>   in the '/etc/hosts.equiv' and '/etc/passwd' will work."

Reference Number: 1006959
Synopsis: Special characters do not work on fields of type date
Release: suningres5.0

Description:
> Special characters, such as *, ?, [. . .], used for pattern
> matching in character string data do not work on fields
> declared as type date.

Work around:
> Specify the complete string in the 'where' clause and avoid
> using special characters for pattern matching.

Library

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

General

Reference Number: 1000984
Synopsis: undocumented maximum length of path names for files referenced
Release: 2.0/23se19

Description:
> If you try to compile an application that references files with
> a path name longer than 42 characters, you get the following ABF error:
> > 9043: Error with parameters "file name".

Reference Number: 1000991
Synopsis: problem with using curses in an equel c program (Ingres)
Release: 2.0/23se27

Description:
> Attempting to use Sun's curses routines in an equel C program
> will result in multiply defined statements.

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Reference Number: 1000994
Synopsis: Bug in doing Joindef's, QBF, over Network/Ingres
Release: 3.0beta, 3.0, 3.2

Description:
　　　　Performing 'JoinDef's over Ingres Network causes Ingres to hang.
Work around:
　　　　Use 'rlogin' to remotely log 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.

Reference Number: 1005507
Synopsis: Ingres5.0 installation script fails for upgrades.
Release: suningres5.0

Description:
　　　　The installation script that is used to upgrade from SunINGRES
　　　　release 3.0 to release 5.0 has the following problems:

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1) Old binaries that are no longer needed are not deleted.
2) The library 'frunlib' is not deleted.
3) The files ingres/bin/kill_ing and ingres/bin/ntproc are
   not upgraded since they are owned by 'root', and the user 'ingres'
   does the install.
4) The files ingres/lib/* are not upgraded either because the
permissions are 444.

Because the libraries are not upgraded, 'ranlib' generates error
messages.
Work around:
   Remove ingres/bin and ingres/lib before the installation.

Reference Number: 1007326
Synopsis: SunIngres generates error messages if an fpa board is installed
Release: suningres5.0

Description:
   If a machine has an 'fpa' board installed, certain queries in SunIngres
   will cause errors such as the following:

   SYSERR: sjcost: bad dio:5.09 or bad cpu:-550

Work around:
   Remove the 'fpa' from the system.

Program

Reference Number: 1002664
Synopsis: optimizedb core dumps on a table with a text field
Release: suningres3.0/25

Description:
   If you run optimizedb on a table that contains a text field, ingres
   will core dump.

Reference Number: 1006498
Synopsis: Builtin numeric functions not working.
Release: suningres5.0

Description:
   When using QUEL in monitor mode, some of the numeric functions do
   not work, even after setting 'macro'. The functions 'mod' and 'abs'
   operate correctly, but 'sqrt' and 'sin' do not.
Work around:

Compute 'sqrt' and 'sin' manually within an EQUEL program, then
send those values to Ingres.

Reference Number: 1007213
Synopsis: The help utility does not work for sql in the terminal monitor
Release: suningres3.0, suningres5.0

Description:
    The help utility on 'sql' ('help sql') in the terminal monitor
    does not give the appropriate information pertaining to 'sql';
    instead, it gives the following error message:

        Unknown exception 30002: current query program aborted
        INGRES Version 5.0/01 (sun.u42/02) logout
        Wed Dec 2 14:56:59 1987

        goodbye -- come again
Work around:
    Do not use the help utility to obtain general information pertaining
    to 'sql', or run the utility on INGRES UNIX Version 5.0/01 (sun.u42/04),
    or later.

Modula2

Modula2

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 when modula2 is
   used with SunOS 3.2:

   MODULE opt;
   VAR r1, r2: REAL;
   BEGIN
         r1 := ABS (r2);
   END opt.

Reference Number: 1004879
Synopsis: "register allocation error" when compiled -f68881
Release: modula1.0

Description:
   When compiling a statement containing several subscripted
   floating point variables, the compiler sometimes aborts
   with the following error message:

         compiler error: register allocation error

   For example, when the following program is compiled
   with '-f68881', a compile time error is returned.
   Note also that the error message has printed a null for the

module name.

m2c -e math -f68881 math.mod
, line 10: compiler error: register allocation error

Reference Number: 1005347
Synopsis: A reset at the beginning of a file causes an access error
Release: modula1.0

Description:
Using 'reset' at the beginning of a file that is opened 'read-only'
causes an access error.
Work around:
Open the file with 'read-write' access.

Reference Number: 1006314
Synopsis: problems with real number evaluation by m2c.
*   Release: modula1.0

Description:
The Modula-2 compiler does not properly evaluate
real constants in floating point constant expressions.
The following programs demostrate the problems with
real number evaluation by m2c.

Program 1:

```
(* something wrong with the evaluation of real numbers *)
MODULE mc001;

IMPORT RealIO, InOut;

BEGIN
RealIO.WriteReal(1., 10, 5);(*the constant 1. is undefined *)
InOut.WriteLn;(* running this program results in "Bus error" *)
END mc001.
```

Program 2:

```
(* more problems with real numbers(all of the below is valid) *)
(* comments indicate incorrect error messages issued *)
MODULE mc001;

CONST
   c08 = 1.  1.1; (* type incompatibale *)
   c0aa = 1.;
   c08b = 1.  1.; (* arithmetic error in evaluation *)
   c08c = 1.1  1.; (* type incompatibale *)
   c08d = -1.;
   c08e = -1.  1.; (* arithmetic error in evaluation *)
   c08f = 1.0 - 1.1;(* type incompatible *)
   c08A = 1.1e1  1.1e 1;(* arithmetic error in evaluation *)

END mc001.
```

Work around:
> Change the form of the constant. For example, change
> the constant 1. to 1.0.

Network

Network
Configuration

Reference Number: 1007719
Synopsis: SunLink DNI must have a way to set the ethernet address
Release: 4.0beta

Description:
> DECnet uses the host node address to compute and set the physical
> ethernet address. In previous releases of SunOS, the 'ifconfig'
> utility was used to change the ethernet address. In 4.0, there
> is no well-defined way to change the ethernet address.

Library

Reference Number: 1002879
Synopsis: initgroups(3)/getgrent(3) causes malloc'd memory 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.

Reference Number: 1007616
Synopsis: getwd often hangs when any NFS server is down
Release: 2.0, 3.0

Description:
> When 'stat'ing a downed NFS server mount point, 'getwd' hangs,
> even when that particular directory is not on the current path.

NFS

Reference Number: 1001130
Synopsis: NFS not enough user protection on /etc/mount.
Release: 3.0

Description:
> If one tries to mount an NFS directory on the system from which
> it is exported, it will hang the system so it must be rebooted.

Reference Number: 1001294
Synopsis: nfs: root access across net does not check group access correctly
Release: 2.2, 3.0, 3.1

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: 1002579
Synopsis: kernel strlen(l) 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: 1003161
Synopsis: nfs client caching has protection problems
Release: 3.2, 3.4

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: 1004343
Synopsis: Release 3.2: Root access to NFS files
Release: 3.2

Description:
The SunOS NFS VFS implementation violates standard UNIX-style
security checking when remapping root into 'nobody' for controlling
accesses to remote NFS-mounted filesystems. For standard disk
filesystems, an ordinary user must have the following:

- read permission on the directory   = to 'ls' the directory
- execute permission on the directory
  plus read access to the file   = to 'cat' the file

Since root is remapped to 'nobody' during remote NFS access, it
should be subject to the same restrictions. There is a known
inconsistency in this behavior when the actual data block of a
file happen to be found in the local node's disk cache.

There appears to be a separate violation regarding the significance
of execute permission, which does not depend on local cache issues.
If a remotely-mounted directory has only public execute permission,
root (but not other users) is able to 'ls' the directory. If a file
in that directory has only public execute permission, root (but not
other users) is able to 'cat' the file.

Reference Number: 1004496
Synopsis: mount(8) option intr doesn't allow keyboard interrupts
Release: 3.2, 3.3

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.

Reference Number: 1004562
Synopsis: login and nfs get confused over group permissions
Release: 3.2, 3.3

Description:
When logging in to an NFS-mounted home directory, group permissions
are incorrectly handled. 'login' runs as 'root' as it sets up the
user environment, including 'cd' to the correct home directory.
The NFS server maps 'root id (0)' to 'nobody (-2)'. This id is
excluded from reaching the home directory; therefore, 'root'
cannot get there.

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Work around:
>   Make the mode 755, or have the NFS server allow root access.

Reference Number: 1004899
Synopsis: open(2) with O_CREAT of existing NFS file behaves erroneously
Release: 3.2, 3.4

Description:
>   When opening an existing NFS file using the 'O_CREAT' flag,
>   the open succeeds or fails, based on whether the existing
>   file's permission modes permits writing to the file. It
>   does not matter what the value of the open flag parameter
>   (such as 'O_RDONLY', 'O_WRONLY', and 'O_RDWR') is set to.
>
>   For example, if a file has permission set to 0200 (the owner
>   can write to the file), all opens using any value for flag,
>   when 'or'ed with 'O_CREAT' and using any value for permission
>   mode will return successfully. The correct behavior for this case
>   should be that opens using flags 'O_RDONLY' and 'O_RDWR' should
>   return errors.

Reference Number: 1006656
Synopsis: unlink(2) for a named pipe crashes systems
Release: 3.2

Description:
>   A problem with using 'unlink(2)' for a named pipe crashes the
>   system executing the system call if the named pipe exists
>   on a file system imported via NFS.

General

Reference Number: 1001313
Synopsis: intermittent file access problems on NFS file systems
Release: 2.0

Description:
>   'link(2)', 'unlink(2)', and 'rename(2)' may intermittently fail
>   on nfs file systems.

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Reference Number: 1003255
Synopsis: Excessive packet activity on diskless client
Release: 3.2

Description:
    ND based diskless systems show anomalous packet activity when they
    shouldn't.

Reference Number: 1006375
Synopsis: ie0 lost interrupt reseting
Release: 3.4

Description:
    When compiling on a Sun-3/280 with two ethernets installed
    that is running Sun OS Release 3.4, the following error
    message appears and the system hangs:

        ie0 lost interrupt reseting

Reference Number: 1007398
Synopsis: in.routed in 3.5 can sometimes drop core
Release: 3.5

Description:
    The routing daemons in 'in.routed' sometimes crash.
Work around:
    Restart the routing daemon after the crash.

Reference Number: 1007600
Synopsis: Need to add proxy arp code to 4.0
Release: sys4-3.2

Description:
    'proxy arp' code is needed to allow proper subnetting of Sun-4
    systems running SunOS Release 4-3.2 and SunOS releases prior
    to Release 3.3.

Program

Reference Number: 1001371
Synopsis: yppasswd responds with "couldn't change passwd"
Release: 3.0, 3.2, 3.3, 3.4

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

Reference Number: 1001385
Synopsis: rlogind doesn't set stty dec
Release: 1.0

Description:
> 'getty' is never run for 'rlogin', so 'stty dec' is not set for
> pty. Thus, whenever pty is used and changes to settings are
> made, those settings stay in effect for the next pty user.

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 be.

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

Reference Number: 1004310
Synopsis: showmount (RPC) times out with 245 nfsmounts
Release: 3.2

Description:
'showmount' times out on a server that has more than 245
entries in '/etc/rmtab' file.

Reference Number: 1004424
Synopsis: in.telnetd doesn't set binary option
Release: 3.3

Description:
'in.telnetd' does not recognize when the task connected to its pty
sets raw mode, and attempts to enable the telnet binary option.
Work around:
Have the originating telnet set binary mode.

Reference Number: 1004770
Synopsis: rlogin propagates incorrect tty width
Release: 3.2, 3.4

Description:
When the width of the terminal or window on the local system exceeds
127 characters, 'rlogin' incorrectly propagates the size of the window
to the remote system.

Reference Number: 1004777
Synopsis: rpc.lockd core dumps
Release: 3.2, 3.4

Description:
A given machine experiences problems where '/etc/rpc.lockd'
disappears after a while, causing all programs using 'lockf'
to hang.

Reference Number: 1005454
Synopsis: tftp transfers the wrong file
Release: 3.2

Description:
  When transferring multiple files in a single session, 'tftp'
  silently takes the wrong file. In subsequent transfer
  requests, 'tftp' takes the file requested in the previous
  transfer command.

Reference Number: 1006506
Release: 3.4

Description:
  '/usr/etc/rpc.rexd' fails when '/usr/bin/on' is called from
  a directory NFS-served by another system, and without global
  read/execute permission.

  When '/usr/bin/on' is invoked to run on a system which does not
  NFS-serve the directory in which the user is currently located,
  and the user's current directory is protected from global
  access by two levels (that is, the directory and parent directory
  do not have world read or execute permission), then
  '/usr/etc/rpc.rexd' fails with the following message:

    on hostname: rexd: can't chdir to /pathname-of-current-directory

Reference Number: 1006787
Synopsis: rsh loses data when waiting for input
Release: 3.4

Description:
  If a pipe is set over the network with 'rsh' and the connection
  is left with no action, data is lost. For example, executing
  one process (such as a read from pipe and write to tape process)
  in a loop with a prompt to the terminal in between can cause data
  loss if the user takes more than about five minutes to respond
  to the terminal prompt.

Reference Number: 1007390
Synopsis: Security hole in in.rshd and in.rlogind
Release: 3.5

Description:
> Certain security holes in the 'rsh' and 'rlogin' daemons were closed.

Reference Number: 1007737
Synopsis: severe bug in lock manager
Release: 3.2

Description:
> A bug in the lock manager 'rpc.lockd' has the effect of ensuring
> that if a response to a request is dropped, retransmissions of
> the request will never produce a reply.

Protocol

Reference Number: 1003156
Synopsis: telnet from a Vax to the Sun fails
Release: 3.2

Description:
> Telneting from a Vax(4.4 VMS) to a Sun running 3.2 will fail but
> telneting 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

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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.

Reference Number: 1004887
Synopsis: 3.3 tcp code not reopening window once it made it 0
Release: 3.3

Description:
    Under certain conditions, 'tcp' code sets the flow-control window
    size to 0, and will not reset it to non-0 until it hears from
    the the receiver.

Reference Number: 1005225
Synopsis: tcp socket closed in race condition
Release: 3.2

Description:
    If a packet to a TCP socket arrives between the time that
    a 'bind(2)' call and a 'listen(2)' call is done, the socket
    behaves strangely. In particular, if the host trying to connect
    to the socket is another BSD host, the listening socket is
    closed off after 45 seconds (the length of the TCP 'keepalive'
    timer).

Reference Number: 1006862
Synopsis: root access security hole in ftp
Release: 3.2, 3.4

Description:
    A security problem with 'ftp' allows unauthorized root access.

Reference Number: 1007243
Synopsis: inet_network doesn't validate octal internet network numbers
Release: 3.2, 3.4

Description:
    'inet_addr' and 'inet_network' do not validate octal
    Internet network numbers. The numbers are incorrectly
    interpreted.

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Yellow Pages

Reference Number: 1001411
Synopsis: ypinit does not copy user-defined yp databases to slave server
Release: 3.0

Description:
A user has installed a customized yellow pages map on his/her
master server. When a new slave server was installed,
'ypinit -s master_name' was done. All the system yellow
pages maps were copied over to the slave server, except the
customized yellow pages map.

Reference Number: 1002940
Synopsis: yppasswd fails on lexically similar logins
Release: 3.0, 3.2, 3.4

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.

Reference Number: 1006738
Synopsis: calendar - only uses local users and does not consult the yp master
Release: 3.4

Description:
'calendar' only looks at the local 'passwd' file instead of
consulting the yellow pages master.

Reference Number: 1006905
Synopsis: yppasswdd sometimes corrupt passwd dbm files
Release: 3.4

Description:
When a large number of password change requests are done
on a large 'passwd' file, the 'passwd' index file ('dbm' files)
become corrupted, because several 'makedbm' processes run
at the same time on the yellow pages master.

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Shell

Shell
Bourne Shell

Reference Number: 1001427
Synopsis: exec in bourne shell gives "no stack space"
Release: 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, 3.4

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, 3.4beta

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.

Reference Number: 1004747

Synopsis: csh login completion dumps core on sun 2 machines

Release: 3.2

Description:

The 'csh loginname' completion causes 'csh' to core dump on
Sun-2 machines. When the tilde is entered as the first character
on the line, then a Control D (^D) is typed, a list of login names
is generated; but when a login name is partially typed in
after the tilde, then ESC is pressed to complete the entry, 'csh'
core dumps.

Reference Number: 1004815
Synopsis: <user> functions erratically when expanded to an empty string
Release: 3.2

Description:
>   The C shell has intermittent problems when expanding <username> into
>   an empty string.

Reference Number: 1005313
Synopsis: csh: cd alias can cause a sub-shell command to fail
Release: 3.2

Description:
>   Assigning a shell variable to the result of a
>   sub-shell command (such as '(cmd)'), where the cmd does
>   a cd to another directory, the sub-shell core dumps
>   with an IOT trap.

Reference Number: 1006279
Synopsis: script arbitrarily jumps ahead and executes random garbage
Release: 3.4

Description:
>   When a C shell script is executed, the script 'jumps' into
>   execution later in the script file when an '$argv[1-]'
>   command is executed. If the script file is altered in
>   any way (such as removing the 'echo' statement), the
>   point to where the script 'jumps' changes because the
>   contents of the buffer changes.

```
#!/bin/csh -fx
#        Cshell script to extract information from System.
#        (This allows the method of extraction to be shielded from
#        the user.) Currently we may access the System database
#        directly (mounted), after assuring that the path has been
#        properly set up.
#
#        USAGE: syscmd System-operation
#        (The System-operation must be a legal System command.)
#


set sys=system


if ($#argv == 0) then
    echo "USAGE: syscmd System-operation"
    echo "(The System-operation must be a legal System command.)"
    exit 1
endif

if (-r /usr/bin)  then                # We have System mounted
    foreach d ($path)
            if ($d == /usr/bin)  then   # System commands in path
                $argv[1-]
                echo hiya   exit $status
            endif
    end    # foreach
    set path=(/usr/bugs/bin/user /usr/bugs/bin /usr/local $path)
    $argv[1-]
    exit $status
endif

#        Otherwise we must access System remotely
#
#        The 'path' stuff in the following line is not needed
#        if you have a permanent account on the machine containing
#        the System data base.
rsh $sys "set path=(/usr/system/bin/user /usr/system/bin /usr/local ath);\
            $argv[1-]"
```

Work around:
        Use 'exec $argv[1-]' instead of the two-line 'exit $status' sequence.

SunAlis
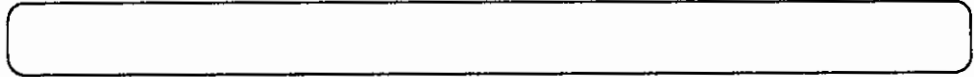
SunAlis
Database

Reference Number: 1004494
Release: SunAlis2.0

Description:
    User can't create a database from the filing menu without specifying a
    model document.

Documentation

Reference Number: 1005103
Synopsis: Method to get Alis mail out of Unix mail is not documented.
Release: SunAlis2.0

Description:
    The SunAlis manual omits how to send UNIX mail to SunAlis mail.
Work around:
    Edit the file 'acapps' in the SunAlis executables directory,
    such that the entry for the 'gtwy3' process has a 'y' instead of a 'n'.
    This will start the 'gtwy3' process with 'aop', and SunAlis mail will be
    extracted from UNIX mail into SunAlis as appropriate. (Also follow the
    rest of the instructions for setting up SunAlis to SunAlis mail
    that travels via UNIX with the gateway registry using 'gtwy2'.)

Reference Number: 1006397
Synopsis: keyboard mapping for vt100 is missing from documentation
Release: SunAlis2.0

Description:
    The SunAlis 2.0 documentation no longer contains the keyboard
    mapping for the vt100 supported by Sun.

General

Reference Number: 1004096
Synopsis: SunAlis 2.0beta will not run on high-res monitors
Release: SunAlis2.0beta

Reference Number: 1004101
Synopsis: Alis garbles screen on gray scale monitors
Release: SunAlis2.0beta

Description:
>   When SunAlis is run on a raw gray scale monitor (that is, without
>   suntools), some screens are garbled. This problem does not occur
>   if SunAlis is started from a shelltool.

Work around:
>   Request SunAlis Release 2.1 from Customer Software Support.

Reference Number: 1004182
Synopsis: alisverify segfaults when run by root on an nfs mounted fs
>   Release: 2.0beta, SunAlis 2.0

Description:
>   If alis is installed via a nfs mount and you run 'alisverify -v'
>   as root, a segfault occurs. If you run 'alisverify' as alis,
>   it works, but gives the message that you need to run 'alisverify'
>   as root to check the network.

Reference Number: 1005016
Synopsis: Problems with Alis and suntools windows
Release: SunAlis2.0

Description:
>   Resizing Sunview windows while running SunAlis may cause loss
>   of parts of the SunAlis display or may cause SunAlis to crash.

Work around:
>   Avoid resizing sun windows while running SunAlis.

Spreadsheet

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, the user cannot edit the area, but can paste
    right over it. This does not occur with regular cells.

Reference Number: 1004489
Synopsis: Spreadsheet column width > window width causes Alis to hang.
Release: SunAlis2.0

Description:
    Using a spreadsheet column width greater than the window width will
    cause Alis to hang when user tries to access that column.

SunGKS

SunGKS
Library

Reference Number: 1006672
Synopsis: Pattern ref point trashes small pattern on GP system
Release: gks2.1beta

Description:
   When the pattern reference point is set in a small pattern
   size fill area on a GP system, the pattern size fill is
   not rendered correctly.

General

Reference Number: 1006215
Synopsis: Multiple open/close sun_tool ws calls waste system memory
Release: gks2.0

Description:
   When many SunGKS workstations are opened and closed (>200)
   a memory leakage consumes swap space because memory is not
   always being freed ater each close.
Work around:
   Fork a separate process for each open/close iteration.

SunPro

SunPro

make

Reference Number: 1006146
Synopsis: NSE make dumps core on lib((__.SYMDEF))
Release: 3.4

Description:
Refer to the MAKE User's Guide, part number 800-1620-05, pages 31 and
40. 'lib((entry))' handling described in the documentation does not
function.

Reference Number: 1006220
Synopsis: Implicit rules for shell files are not correct
Release: 3.4

Description:
The customer reports that the implicit rules for shell files in
nse 'make' are described in the nse manual, part number
800-1620-05, page 28 as follows:

```
cp $< $@
chmod  x $@
```

This works fine if 'make' is only run one time. If 'make' is
run a second time, 'cp' fails because permission is denied.
Thus, this implicit rule fails every time after the first run
of 'make' on a makefile that uses this implicit rule.

SunSimplify

SunSimplify

Reference Number: 1004443
Synopsis: query_modify returns incorrect count
Release: sunsimplify1.0

Description:
 The Eric procedure 'query_modify' incorrectly returns
 the number of records selected rather than the number
 of records that were updated because it parses the
 record counts incorrectly.

Reference Number: 1004570
Synopsis: RPC timeouts possible for large databases
Release: sunsimplify1.0

Description:
 It is possible to get 'RPC timeouts' when only a few
 users are accessing a large database located on one
 database server.

Reference Number: 1006254
Synopsis: read-only library doesn't work correctly with raw devices
Release: sunsimplify1.0

Description:
 If a remote database is opened using the 'read-only' library
 and that database uses raw file partitions, the library attempts
 to open the raw files on the local machine.

Reference Number: 1003975
Synopsis: schemaload can core dump with delete_tables option
Release: sunsimplify1.0

Description:
 When performing 'schemaload' specifying 'delete_tables',
 passing the address of 'scan_id' to 'seq_next' causes
 'schemaload' to 'seg fault'.
 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) {
  .....
```

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.

Reference Number: 1004337
Synopsis: databrowse core dumps when entity record locked
Release: sunsimplify1.0

Description:
> When the user sets 'Skipped Locked Records' to 'yes'
> and then attempts to display and select a locked entity,
> Databrowse core dumps.

Work around:
> Do not run with 'Skipped Locked Records' set to 'yes'.

SunTrac

SunTrac

Reference Number: 1006958
Synopsis: suntrac's assign fails when schedules are not reducible
Release: suntrac1.0

Description:
    'assign' fails to inform a user that an activity less
    than one day long cannot be reduced.

Reference Number: 1006475
Synopsis: print layout of outside labels very bad
Release: suntrac1.0beta

Description:
    The layout of labels appearing outside boxes collide when
    printing, thus rendering them unreadable.

Reference Number: 1007105
Synopsis: Sketch can only handle 100 diagrams in a directory at one time.
Release: suntrac1.0

Description:
    The 'sketch' utility cannot handle more than 100 diagrams in
    a directory at one time.
Work around:
    Keep less than 100 diagram files in the working directory.

SunUNIFY

SunUNIFY

Reference Number: 1002645
Synopsis: btree index are getting corrupted
Release: sununify1.0

Description:
    In Release 1.0 of SunUNIFY, B-trees can be corrupted if
    there are many users updating (or in a few cases reading)
    the B-trees concurrently.

Reference Number: 1003907
Synopsis: it is not possible to close sets opened by unisort
Release: sununify2.0
.sp
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: 1005407
Synopsis: inconsistencies during rec_insertkey on deleted, locked record
Release: sununify2.0

Description:
    Inconsistencies sometimes occur when two processes have the same record
    locked. Process A deletes the record, process B tries to do a
    'rec_insertkey', but it fails because the record is locked. When
    the record is unlocked, the 'rec_insertkey' (your addrec) will work.
    The error returned when the record is locked is a bad reference; it
    is not an indication that the record is locked.

Reference Number: 1003000
Synopsis: sql queries that use lines 0 and group by cause wrong results
Release: sununify1.0, sununify2.0beta

Description:
  If you use 'lines 0' at the start of an SQL query that has a
  'group by' clause, the query appears to return incorrect 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 the following result:

  105

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: 1002561
Synopsis: SQL does not handle (complicated) queries
Release: sununify1.0, sununify2.0

Description:
    Occasionally, posing a complex query for which the result depends on
    the order of the second and third clause gives incorrect
    results. For example, in the following complex query,
    the third conjunct is ignored:

```
select bugid_value, bugid_keywd, keyword_val
from bug_tbl, kywd_tbl
where
        manager_value = 'pfeiffer'
    and
        bugid_keywd = bugid_value
    and
        [ keyword_val = 'setup' or keyword_val = 'install' ]
/
```

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:

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```
sql> select * from ccl_t/
recognized query!

concl_value|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.

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_numb_other = 255
                    ;
        /

    There is no field_numb_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 Control-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: 1004232
Synopsis: invalid field number from SCHENT (procfld) during schema entry
Release: sununify2.0

Description:
When the user changes the size of a newly added reference field, the referencing field's mode is set to 'M'. The mode should have remained 'A'.
Work around:
Delete the referencing field.

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.

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Work around:
>   Make all string fields that must be compared with another
>   field (and not a constant) equal in size.

Reference Number: 1004764
Synopsis: ordering of SQL and clauses gives different results
Release: sununify2.0

Description:
>   The following SQL query returns incorrect values when the line
>   marked with 3 stars is between the
>   'and category_val ^=' line and the 'and bugid_value ='.
>   However, correct values are returned when the line marked with
>   stars is the last line in the 'where' clause.

```
lines 0
select
        'Total Resolved', count (*)
from
        bug_tbl
where
 bugid_value > 999999
        and category_val ^= 'test'
        and bugid_value = select unique bugid_call
                from bg_cal_t
                where comp_call ^= 'Sun*';
***     and progress_val = < 'released', 'inactivated' >
/
select
        'Total Unresolved', count (*)
from
        bug_tbl
where
 bugid_value > 999999
        and category_val ^= 'test'
 and progress_val ^= 'released'
 and progress_val ^= 'inactivated'
        and bugid_value = select unique bugid_call
                from bg_cal_t
                where comp_call ^= 'Sun*'

/
```

Reference Number: 1006420
Synopsis: reconfigure completes ok even if db_file.h and db_structs.h
        aren't updated
Release: sununify2.0

Description:
        If the database is reconfigured, 'db_structs.h' and 'db_file.h'
        cannot be updated. The reconfigure process completes without
        returning any error messages.
Work around:
        Manually run the 'dbheader' program to produce 'db_file.h',
        and run the 'dbstructs' program to produce 'db_structs.h'.

Reference Number: 1006610
Synopsis: Transaction logging in UNIFY doesn't keep TEXT fields
Release: sununify2.0

Description:
        Transaction Logging function does not save 'TEXT'
        information.

Sunview

SunView
Library

Reference Number: 1003168
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: 1003706
Synopsis: horizontal scrollbar for panel doesn't work very well.
Release: 3.2

Description:
> Left and right buttons are occasionally inoperative when attempting
> scrolling on a panel.

Work around:
> Use the middle key when attempting horizontal scrolling.

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: 1004138
Synopsis: sunview: popup panels w/ scrollbars don't work properly
Release: 3.2, 3.4beta

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: 1004139
Synopsis: PANEL_EVENT_MOVE_IN never received in panel event proc
Release: 3.2

Description:
    The panel package has three extra event codes which it
    defines: 'PANEL_EVENT_DRAG_IN', 'PANEL_EVENT_CANCEL',
    and 'PANEL_EVENT_MOVE_IN'. These events are delivered
    to 'PANEL_EVENT_PROC's and 'PANEL_BACKGROUND_PROC's.

    The event 'PANEL_EVENT_MOVE_IN' is never delivered to either
    'PANEL_EVENT_PROC' or 'PANEL_BACKGROUND_PROC'.
Work around:
    In the 'window_create' call, specify 'LOC_MOVE' in the pick mask,
    as follows:

    panel = window_create(frame, PANEL,
            ...
        WIN_CONSUME_PICK_EVENT, LOC_MOVE,
        0);

Alternately, use 'window_set' after the 'window_create' call to
do the same function, as follows:

window_set(panel, WIN_CONSUME_PICK_EVENT, LOC_MOVE, 0);

Once either of these has been done, put a scrollbar into the
panel.

Reference Number: 1004151
Synopsis: canvas resize does not repaint properly
Release: 3.2, 3.4beta

Description:
'CANVAS_WIDTH' and 'CANVAS_HEIGHT' are modified after canvas
creation by 'window_set()'. After modification, the canvas
picture is either lost or modified, despite having a retained
pixrect.

Reference Number: 1004226
Synopsis: slider item display wrong when min wider than max
Release: 3.2, 3.4beta

Description:
If the minimum slider value is wider than the maximum slider
value, (for example, 'MIN= -1000' is wider than 'MAX=10'),
the slider bar obscures part of the minimum value.
Work around:
Specify that the minimum and maximum values are not
displayed by setting the panel item attribute 'PANEL_SHOW_RANGE'
to 'FALSE'; then display these values instead on the next
line with a pair of panel message items.

Reference Number: 1004230
Synopsis: 'Get' key down outside a window outputs to random window
Release: 3.2

Description:
If the 'Get' key is pressed outside a window (in root gray window
of 'suntool'), the contents of the shelf often appear in some window,
not where the caret is. The window containing the shelf
contents is the window in which some Text Function key action
has been performed, such as 'Find', 'Put', or 'Get'. This window
may not even be visible or may be iconic, which may result in
the user inadvertently trashing or corrupting the file being edited.
Furthermore, the location where the 'Get' operation occurs

is often not even where the caret was last positioned; rather,
it seems to occur at the end of the file, which can be outside of
the visible portion of the window.

Reference Number: 1004251
Synopsis: interpose on scroll events behaves erratically
Release: 3.2, 3.3, 3.4beta

Description:
> An application attempts to adjust two (identical) scrollbars
> simultaneously on one SCROLL_REQUEST. The method of
> implementation is to 'interpose' on the scrollbars, and when
> the event is received on the first scrollbar, call
> 'scrollbar_scroll_to' on the second scrollbar with the
> 'view_start' obtained from a 'scrollbar_get' on the first.
>
> The problem is only seen when using the page buttons. After
> a specific sequence of steps, the behavior on the second
> scrollbar shows no relation to the requests being made on the first.

Reference Number: 1004423
Synopsis: wmgr_figuretoolrect fails and trashes stack
Release: 3.0, 3.2, 3.4beta

Description:
> In Release 3.2, calling 'wmgr_figuretoolrect' with a 'rect'
> whose values are set to WMGR_SETPOS causes overwriting of the stack.
> In Release 3.4, the stack is correct, but the 'rect' values are not set.

Work around:
> A user can workaround this problem via the following undocumented and
> unsupported method:

```
/*    Declare a dummy rect   */

Rect   dummy;

      /*    Replace call to wmgr_figuretoolrect( )
       *    with call to wmgr_get_placeholders(l)
       *    with two arguments.  First argument is the
       *    Rect that you would otherwise pass to
       *    wmgr_figuretoolrect( ), second is the dummy
       *    Rect.
       */

wmgr_get_placeholders(&rtool,&dummy);

      /*    Rect values in rtool are now set.     */
```

Reference Number: 1004437
Synopsis: Panel text item fails to remove caret when disabled.
Release: 3.2

Description:
> If the attribute 'PANEL_SHOW_ITEM' of a SunView panel text item is
> set to 'FALSE' during a 'notify proc' event notification to the item,
> the caret symbol is not removed. An inactive caret figure is left at
> the end of the text string, and remains there until a window
> system interaction (such as 'Repaint') regenerates the screen.

Reference Number: 1004512
Synopsis: Choice-item layout problem in panel package
Release: 3.2

Description:
> Using MARK and NOMARK images for a choice item in the panel
> package and using the MARK_XS and MARK_YS attributes, the user
> attempts to control the placement of the MARK and NOMARK images
> in order to put the images exactly adjacent to each other.
> However, before drawing the 'mark' image the 'panel' package
> clears a 'rect' that is the size of the 'mark' image plus 3
> pixels. It then draws the 'mark' image. Because I have
> two images adjacent to each other, this causes the first 3 pixels
> of the second image to get cleared.

Reference Number: 1004580
Synopsis: textsw_file_lines_visible( ) returns incorrect values
Release: 3.2

Description:
> If a SunView application calls
> 'textsw_file_lines_visible(&top, &bottom)' when there
> is no text in a 'textsw', it returns the values '
> top = 0','bottom = -1'. If the   SunView application
> then reads a file into the 'textsw', and calls
> 'textsw_file_lines_visible( )' again, it still
> returns (0, -1).

Work around:
> Scrolling or editing the text makes it return the correct values.

Reference Number: 1004594
Synopsis: middle button "thumbing" bad near top of textsw scrollbar
Release: 3.2

Description:
> If the user 'thumbs' in a text subwindow with the middle button
> somewhere near the top of the scrollbar, the window displays part
> of its contents somewhere near the top. This is correct. If,
> however, the scroll bubble is near (but not at) the top of the
> file and the user clicks the middle button again a few pixels
> nearer the top of the scrollbar, the window sometimes scrolls
> down, displaying data closer to the bottom of the file.
> The reverse is also true: middle-clicking near the bottom of
> the scrollbar sometimes scrolls up, displaying data closer
> to the top of the file.

Reference Number: 1004901
Synopsis: tty subwindow terminal emulator processes some ESC sequences wrong
Release: 3.2

Description:
> When a customer uses the Sun as a terminal to another system,
> the following 'ESC' sequences do not work correctly in 'tty' subwindows,
> but run okay outside of the window system):
>
> 1)   ESC E[2H   followed by
> ESC E[3H   followed by
> ESC E[3,9H followed by
> ESC E[3H
>
> (originally noticed when the user typed '^N ^N ^E ^A' under 'EMACS')
>
> 2)   ESC E[H   followed by
> ESC E[J
>
> (originally noticed when the user typed '^L' under 'EMACS')
>
> The incorrect behavior sometimes manifests itself as a failure of
> 'EMACS' to update the cursor position.

Reference Number: 1005083
Synopsis: tty: create and destroy loop of tty window eventually fails
Release: 3.0, 3.2, 3.4

Description:
> If an application does a 'create' of a 'tty' window followed by a
> 'destroy' of that window several times (on the order of 3 to 10 times),
> the application eventually fails. This failure results in one
> or a combination of the following:

> 1. Prints 'WIN ioctl number C014671F: Bad file number'
>   type error messages.

> 2. Prints the message 'couldn't find user name'.

> 3. Application dies with a segmentation failure.

> These failures are indicative of partial memory trashing,
> perhaps due to incomplete cleanup by the destroy of the
> 'tty' subwindow.

Work around:
> Instead of creating/destroying tty windows, one can repeatedly fork
> and exec shelltools, but this only works if you want a separate frame.

Reference Number: 1005102
Synopsis: storage leak in 3.4 sunview
Release: 3.2, 3.4

Description:
> The panel_destroy_item( ) call does not always reclaim the storage
> that has been allocated to the panel item.

Reference Number: 1005111
Synopsis: Text subwindows die when selecting words w/8-bit chars
Release: 3.2
Release: 4.0alpha2

Description:
> If an attempt is made to select a word containing characters with
> the eighth bit set by doing a mouse button double-click within a
> text subwindow, the text subwindow code aborts.

Work around:
> Select using the left button to start the selection and the
> middle button to extend it.

Reference Number: 1005173
Synopsis: Shelltools do not redraw emboldened text after being resized.
Release: 3.2, 3.4

Description:
> When the user brings up 'shelltools' in emboldened mode and resizes it,
> the text is not redrawn.

Reference Number: 1005414
Synopsis: Menu/Initial_selection_expanded default doesn't work
Release: 3.4

Description:
> The default 'Menu/Initial_selection_expanded' (in 'defaultsedit')
> does not work as described in the 'help' screen.

Reference Number: 1005726
Synopsis: No way to insert special characters into textsubwindows
Release: 3.4

Description:
> There is no way to insert text subwindow special characters,
> such as '^F', into a text subwindow or panel text item.
> There is no way to insert control characters, such a '^F', into a
> text subwindow or panel text item.

Reference Number: 1005729
Synopsis: textsw: WIN_FONT attribute ignored in 3.4
Release: 3.4

Description:
> In SunOS 3.4, the 'WIN_FONT' attribute appears to be
> ignored by a 'TEXTSW' window when created with 'WINDOW_CREATE'.
> The window uses the default font instead of the font argument
> to 'WIN_FONT'.

Work around:
> Create the text subwindow, then use 'window_set( )'
> to set the '/Text/Font' default font.

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Reference Number: 1005860
Synopsis: subwindow never displayed if created when frame is closed
Release: 3.2, 3.4

Description:
If a base frame is created in a closed state (either with
the 'FRAME_CLOSED' attribute or if the frame is closed
from the command line) and a subwindow is created with
the 'WIN_SHOW' attribute as 'FALSE', the subwindow does
not get displayed. All subwindow types are affected,
including panel, text, tty, canvas and subframe.
Work around:
Do not set 'FRAME_CLOSED' at create time. Instead,
set it using 'window_set( )' after the subwindow has
been created. This workaround, although functional, will
generate the following (apparently harmless) error message:

WIN ioctl number 20006703: Device busy

Reference Number: 1006211
Synopsis: textsw: internal routines with common names
Release: 3.4

Description:
The 'textsw' package defines several internal routines which
have common names that may collide with client usage.
Some of these include 'copy_file( )', 'copy_status( )',
'copy_fd( )', and 'Perror( )'.

Reference Number: 1006242
Synopsis: User can no longer position a panel item label.
Release: 3.4

Description:
As of Release 3.4, positioning a panel item label using
'PANEL_LABEL_X, PANEL_LABEL_Y' no longer functions; the
attributes are ignored.

Reference Number: 1006426
Synopsis: window_create failed to return NULL on failure for panel
Release: 3.2

Description:
>   When creating a panel, if creation fails due to running out
>   of file descriptors, the handle returned by 'window_create' is not
>   set to NULL.

Work around:
>   Use 'open(2)' to determine if a file descriptor is available
>   before calling 'window_create()'.

Reference Number: 1007178
Synopsis: corruption of internal text-subwindow table causes infinite loop
Release: 3.4

Description:
>   Corruption of an internal 'text-subwindow' table can
>   cause an infinite loop in the 'text-subwindow'. This
>   only occurs if the 'text-subwindow' uses 'marks/glyphs'
>   as in 'filmerge' and 'dbxtool'.

General

Reference Number: 1001996
Synopsis: curses/sunwindows bug (writes not updated properly)
Release: 2.0

Description:
>   When curses writes to a highlighted field running in
>   a 'tty' subwindow, the highlighted field is sometimes
>   not updated properly, but works fine if running outside
>   SunView or through an 'rlogin'. '/usr/games/canfield'
>   exhibits a similar problem.
>
>   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: 1006328

Synopsis: Suntools mouse input speed limit enforced as default

Release: all

Description:

In 'suntools', the mouse input speed limit is enforced
by default.

Work around:

Run 'defaultsedit'. Change 'Speed_Enforced' in the Input
form to "No". Save changes.

Program

Reference Number: 1002466

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

Release: 3.0

Description:

If a user has write permission for a file being edited, but not
for the current directory, 'store' and 'save' fail because textedit
cannot write the backup file.

Work around:

Do a 'Store as New File' to a directory with write permission.
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:

When 'textedit' (or any tool that uses scroll bars)
is given a width in characters ('-Ww'), the tool gets sized
to the specified character width, but the scroll bars use up
some of that space, resulting in a width smaller than intended.
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: 1002651
Synopsis: internal error using mailtool using textedit
Release: 3.0, 3.1

Description:
When a user attempts to formulate a reply to an incoming mail message by using another editor, transfers the message into the 'mailtool' window using the 'get from file' option of the pop-up menu, edits the message a bit more, then attempts to deliver the message, the following error message occasionally occurs:

Save failed due to INTERNAL ERROR
ps_replace_original_esh; status =
0x2 (Click any button to remove
msg.)

When user attempts to formulate a reply to an incoming mail message by using another editor, then, using the result with the 'get from file' option of the pop up menu, edits the message a bit more and attempt to deliver it, the following error box sometimes occurs:

Save failed due to INTERNAL ERROR
ps_replace_original_esh; status =
0x2 (Click any button to remove
msg.)

Reference Number: 1003138
Synopsis: csh filename completion inoperative in csh cmdtool
Release: 3.2

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

Reference Number: 1003712
Synopsis: mailtool crashes when filesystem is full
Release: 3.2

Description:
'mailtool' crashes when the filesystem is allowed to fill up to maximum capacity.

Reference Number: 1003894
Synopsis: Edit a message in mailtool, then "new mail". First one gone.
Release: 3.2

Description:
>   If a 'mailtool' mail message is edited, then 'new mail' is
>   selected, the edited message disappears.

Reference Number: 1004292
Synopsis: cmdtool core dumps if no permission to write to /tmp
Release: 3.2, 3.4beta, 3.4

Description:
>   In release 3.2, if the permissions of the '/tmp' directory
>   deny the user 'write' access, 'cmdtool' dies with the following
>   error message:
>
>   Memory fault - core dumped
>
>   Under the same conditions in release 3.4, the 'cmdtool' prints
>   the following error message:
>
>   window: subwindow creation failed
>
>   However, the system creates the 'cmdtool' anyway.
>   Since 'cmdtool' is not able to save necessary information in /tmp, it
>   should gracefully terminate.

Reference Number: 1004373
Synopsis: defaults edit does not update .indent.pro
Release: 3.2, 4.4beta, 3.4

Description:
>   The editing tool 'defaultsedit' does not update the '.indent.pro' file,
>   even though system messages indicate that the file has been updated.

Work around:
>   Change .indent.pro manually.

Reference Number: 1004474
Synopsis: programs started from shelltool receive extraneous descriptors
Release: 3.4

Description:
   Programs started from 'shelltool' receive extraneous open
   file descriptors. For example, when the following program
   is started from 'shelltool', six extraneous open file descriptors
   occur in slots 3, 4, 5, 8, 9, and 11:

   shelltool -Ws 571 746 -Wp 582 0 -Wl emacs emacs -eshell

Reference Number: 1004755
Synopsis: cmdtool strings larger variable size quit disappear
Release: 3.2

Description:
   If a user enters a large string (over 2000 characters) without embedded
   'carriage returns' into a 'cmdtool', the 'cmdtool' disappears and no
   error message is sent to the console window.

Reference Number: 1004882
Synopsis: Occasionally, put and get don't work correctly in textedit
Release: 3.2, 3.4

Description:
   Occasionally, the text that a user 'puts' on the shelf using
   the 'L6' key remains on the shelf when the user selects text
   in another window.

Reference Number: 1005819
Synopsis: toolmerge botches exit status
Release: 3.4

Description:
   'Toolmerge.c' exits with status 0 even when the command
   it executed returned a nonzero value.

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Reference Number: 1006045
Synopsis: cmdtool dies with "reset tty pgrp" message
Release: 3.4

Description:
Occasionally a 'cmdtool' dies when a command is typed, and the
following message appears in the system console:

reset tty pgrp

Reference Number: 1006074
Synopsis: cmdtool goes bonkers going iconic during tty-mode switch
Release: 3.4

Description:
When closing a cmdtool into an icon, the icon is sometimes
overlayed by the actual cmdtool canvas. This can happen when
exiting the tty-mode of cmdtool prior to going iconic.
Work around:
Wait for operations to complete in the window before closing it into
its icon.

Reference Number: 1006332
Synopsis: clocktool has IV instead of IIII.
Release: 3.1

Description:
'Clocktool' has been incorrectly changed to use roman
numeral IV at the 4 o'clock position instead of IIII
(which is the correct clock convention).

Reference Number: 1006358
Synopsis: mailtool Folder menu dies on /Display_PostScript
Release: 3.4

Description:
'mailtool' fails to bring up the folder menu when
the length of the folder list exceeds mailtool's
internal limit.

Reference Number: 1006896
Synopsis: cmdtool disappears with normal usage
Release: 3.4

Description:
    'cmdtool' occasionally disappears without any errors.

Reference Number: 1007057
Synopsis: Textedit FIND key use may result in apparent system hang.
Release: 3.4

Description:
    A large file is edited in a read-only textedit session.
    The view is split with the top view containing only three
    lines. When a selection is made and the FIND key is
    pressed in the smaller view, the view scrolls very fast
    and does not respond to the STOP key. Sometimes the
    process must be killed externally.
Work around:
    Search for the text manually, split the screen so it is big,
    then when the text is found, shrink the window.

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Reference Number: 1003720
Synopsis: pw_putattributes does not set retained memory pixrect attributes
Release: 3.2, 3.4

Description:
    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
    color map double buffering).

Reference Number: 1003908
Synopsis: Bad repainting from retained pixrect if pw_set_xy_offset used
Release: 3.2

Description:
    An application calls 'pw_region' and 'pw_set_xy_offset' to set
    up a clip region in pixel coordinates. Thus, in a window of
    200 x 200 pixels, the application could draw a 'polyline' from
    a coordinate list, then do the following:

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newpw = pw_region(pw, 100, 100, 50, 50);
pw_set_xy_offset(newpw, 100, 100);

and redraw from the same coordinate list, drawing over the
portion within the clip region. The application utilizes the
'pw_set_xy_offset' call to avoid having to adjust all the
coordinates in the list.

This works correctly while drawing in the primary 'pixwin', but
when the application calls 'pw_repairretained' to do damage repair,
the image on the screen moves left and downward by (100,100) pixels.

Experimentation shows that 'pw_repairretained' ignores the offset.
Attempts to set it to (0,0) before doing damage repair results
in shifting the whole image over. The amount of shift
respresents where the image would have been drawn in the pixwin
in the offset had been (0,0) before drawing. This amount
of shift also matches the part of the image that is misdrawn
by 'pw_repairretained'.

Reference Number: 1004860
Synopsis: user defined DEVID's incorrectly look negative
Release: 3.2

Description:
    The file '/usr/include/sundev/vuid_event.h' states that
    'Vuids' from '0x80' to '0xFF' are reserved for Sun customers.

    If any of these vuid's are used, they create vuid's that start
    at '0x8000'. These get stored as 'signed shorts' in the 'Event
    structure' and get passed as 'signed shorts', which
    have their signs extended into negative integers, in such routines
    as 'win_post_id'.

    If the programmer defines event codes in the same way that the system
    does in 'vuid_event.h', then the event codes get defined as 'signed
    integers', not as 'shorts' (the C compiler does not recognize constant
    integers of type 'short').

    Thus, any event routine gets an event whose 'ie_code' is a
    negative number (such as 0xFFFF8000), and if the application tries to
    compare it against a positive integer (such as 0x000080000),
    it fails.

Work around:

Redefine 'event_id(e)', defined in
'/usr/include/sunwindow/win_input.h' as

((event)->ie_code)
        to
((unsigned short) (event)->ie_code)

Reference Number: 1006173
Synopsis: damaging suntools colormaps can cause "panic: bus error"
Release: 3.2, 3.4

Description:

In 'SunView', doing a 'pw_putcolormap' onto the 'monochrome
colormap' segment and writing more values than the segment has
room for, damages all of the 'colormap' segments, and in some
cases, the kernel's internal data. This can cause the
system to crash when the cursor is moved into the affected
'pixwin'.

Work around:

Make sure that your program is consistent about where
it gets the canvas 'pixwin' and make sure that no
program writes a color table which is larger than
the 'colormap' segment.

Reference Number: 1006741
Synopsis: TIOCGSIZE incorrectly reports ttysize.ts_cols greater than 255
Release: 3.2, 3.5beta

Description:

The TIOCGSIZE 'ioctl' incorrectly reports 'ttysize.ts_cols'
as 255 even when the number of columns is greater than 255.
The TIOCGSIZE ioctl incorrectly reports ttysize.ts_cols as 255 for
number of columns greater than 255.

Reference Number: 1006772
Synopsis: suntools: does not work when run from overview
Release: 3.4

Description:

'suntools(1)' does not work if run from 'overview(1)'.

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Reference Number: 1007410
Synopsis: fullscreen_init sometimes will trash useful memory
Release: 3.2

Description:
   'fullscreen_init( )' may trash useful memory in certain
   cases.

Reference Number: 1007443
Synopsis: PW_DBL_WRITE sets to PW_DBL_FORE when menu created with
Release: 3.5

Description:
   When using hardware double buffering,
   if a double buffer application creates a menu using
   'menu_show( )', the value of 'PW_DBL_WRITE' is set to
   'PW_DBL_FORE'. If the application is writing to the
   background buffer at this time, subsequent graphics
   will go to the front buffer instead of the background
   buffer.

Reference Number: 1007545
Synopsis: kernel panics in wlok_forceunlock
Release: 3.5

Description:
   System crashes in the form of a panic (bus error)
   may occur while executing SunGKS 2.1 applications.
Work around:
   Run 'swin -t 0' before running a GKS program. This
   should disable event locking. See 'swin(1)'.

System Administration

System Administration
Install

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
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".

Setup

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.

Reference Number: 1004874
Synopsis: /etc/dump doesn't always return correct exit codes
Release: 3.2

Description:
        '/etc/dump' does not always return the correct exit codes.
        For example, an exit code of 1 is described in the documentation
        to act as a normal exit, but there are some cases when 'dump'
        incorrectly returns 1. The errors seem to be caused by various
        routines in '/usr/src/etc/dump/dumprmt.c' that incorrectly 'exit(1)'
        when they probably should only 'return(1)'.

Reference Number: 1005619
Synopsis: Not all NFS clients consistently receive shutdown messages
Release: 3.4

Description:
        When shutdown is run on an NFS server, clients do not reliably
        receive the shutdown message.
Work around:
        Make '/etc/rmtab' have less information.

Reference Number: 1006856
Synopsis: '/etc/pstat -t' doesn't report on the mcp tty ports of the ALM-2
Release: 3.5beta

Description:
        '/etc/pstat -t' doesn't report on the mcp tty ports of the ALM-2.

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Transcript

Transcript

Reference Number: 1002930
Synopsis: lpr -f doesn't work with a LaserWriter
Release: 3.0, 3.2

Description:
     'lpr -f', a documented feature of 'lpr', does not work with the
     LaserWriter, since the LaserWriter software does not support it.
Work around:
     Use the following:

        fpr | lpr

Reference Number: 1002932
Synopsis: ps4014 command does not work properly in some cases
Release: transcript2.0

Description:
     When a user attempts to print a graph (named 'tut') using the
     following command, only the axes appear, and the graph does not
     print:

        cat tut|ps4014|lpr

     When the customer tries to print his graph, only the axes show
     up. The graph never does print.

Reference Number: 1002967
Synopsis: 'ptroff -F Helvetica' fails to always correctly change fonts.
Release: transcript1.0, 2.0

Description:
     The command 'ptroff -F Helvetica' fails to correctly change fonts
     on a consistent basis. Some italics text appears in regular font,
     and the regular text that follows appears in italics. There are
     also cases when bold prints using the regular font.
Work around:
     Don't use '-F' or use another font.

Reference Number: 1003229
Synopsis: lpr fails to print full last character of long lines
Release: transcript2.0

Description:
> Printing long lines of text using 'lpr' with Transcript Release 2.0 causes the rightmost character (the 83rd character on the line) to be partially printed, thus losing the rightmost portion.

Work around:
> Use 'enscript' instead of 'lpr', if possible.

Reference Number: 1003644
Synopsis: daemon filter 'f' malfunction (2) error
Release: transcript2.0

Description:
> When TranScript filters become confused by incorrect PostScript files, thus logging a message similar to the following:

> Daemon Filter 'f' Malfunction (2)

> Once the error message appears, printing becomes erratic.

Reference Number: 1005877
Synopsis: psrev can not be used on files that have gone through ps630
Release: transcript2.0

Description:
    If a file is passed through the 'ps630' filter, then an attempt
    is made to use 'psrev' on the file, the following error messages
    appear:

        psrev: PS file does not begin with a version identifier
        lpr: standard input: empty input file

Work around:
    In the 'foo' file, add the following string to the '%!' at the
    top of the file:

        PS-Adobe-

    When this is done, there is no need to call 'psrev', as the
    file will automatically be page-reversed, provided the shell
    variable 'REVERSE' is defined and exported in 'PSLIBDIR/psint.sh'
    or 'SPOOLDIR/options'.

Reference Number: 1005982
Synopsis: laserwriters occasionally hang
Release: transcript2.0

Description:
    LaserWriter printers occasionally stop printing.
Work around:
    The following specific series of actions will make the
    LaserWriter start printing again:
        1. Stop the printer queue using 'lpc stop (printer name'
        2. Kill all process associated with the printer
           (including 'lpd' and 'psbanner')
        3. Remove the printer's lock file
        4. Restart the printer, using 'lpc start (printer name)'

Reference Number: 1006147
Synopsis: clipping problems with A4 paper on LaserWriter 2.0 printers.
Release: transcript2.0

Description:
> LaserWriter version number 2.0 (PostScript interpreter version 38.0)
> printers clip the edges of various TranScript 2.0 output when using
> the A4 size paper tray.

Reference Number: 1006278
Synopsis: ps4014 filter does not work
Release: transcript2.0

Description:
> The following program draws a line on the 'tektool' screen.
> If the output is sent to the LaserWriter printer, the only
> output is a blank page.

```
#include <stdio.h>

main () {
  openpl( );
  line ( 200, 200, 500, 500 );
  closepl( );
}
```

> Compile with 'cc file.c -14014 -lm'. It runs properly in 'tektool',
> but attempts to print the file using the following commands produces
> a blank page, and the error log shows no errors.

```
file |ps4014|lpr

file>file.tek
cat file.tek |ps4014|lpr

ps4014 file.tek |lpr

ps4014 file.tek>file.ps
lpr file.ps
```

Utilities

Utilities
Editor

Reference Number: 1003499
Synopsis: vi - ":$r" does not undo properly
Release: 3.2

Description:
>   The 'undo' command ('u') in 'vi' does not work
>   properly when used with ':$r'.

Work around:
>   Go to the bottom of the file, then read in the second
>   file as follows:

Shift g	- to go to bottom of file1
:r file2	- to read in file2
u	- undo works fine!

Reference Number: 1004858
Synopsis: vi :ta tags file does not correctly handle relative pathnames
Release: all

Description:
>   If a ':ta' tags file in 'vi' contains relative pathnames, 'vi'
>   looks for those files relative to the current working directory,
>   rather than relative to the directory in which the tags file
>   resides.

Work around:
>   If source is available, add code to 'tagfind()' in the
>   'ex_cmdsub.c' to save the directory of the tags file. If the
>   target file does not exist, prepend it to the target filename.

Reference Number: 1006315
Synopsis: vi can crash when used on remote file systems.
Release: 3.2, 3.4

Description:
>   'vi' sets the maximum size of some buffers to the
>   block size of the machine it is compiled on. Because
>   NFS performs operations based on the server's block
>   size, so it may not match the block size of the client,
>   thus causing 'vi' to dump core.

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Formatter

Reference Number: 1001748
Synopsis: 'vtroff -F nonie -me' produces Floating Exceptions with .hl macro
Release: 2.0, 2.2, 3.0

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."

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.

Reference Number: 1002807
Synopsis: .TH macro of -man package defective
Release: 3.0

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

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Work around:

   If the following changes are made to /usr/lib/tmac/tmac.an,
   it conforms more closely with the doumentation 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(.l
   - '   # this seemed to be missing -- pZ XYZ
   - .ds]W \\$4
    .ds]H \\$1\\(\\\\$2\\)
    .ds]D UNKNOWN SECTION OF THE MANUAL
    .if '\\$2'1C' .ds]D USER COMMANDS

   --- 112,117 -----
    .if t .po .588i
    .ll 6.5i
    .nr LL \\n(.l
    .ds]H \\$1\\(\\\\$2\\)
    .ds]D UNKNOWN SECTION OF THE MANUAL
    .if '\\$2'1C' .ds]D USER COMMANDS

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

--- 141,146 -----
 .if '\\$2'8' .ds ]D MAINTENANCE COMMANDS
 .if '\$2'8C' .ds ]D MAINTENANCE COMMANDS
 .if '\\$2'8S' .ds ]D MAINTENANCE COMMANDS
 .wh0 }H
 .if t .wh -1i }F
 .if n .wh -1.167i }F
```

Reference Number: 1006250
Synopsis: Using .TP (-man) macro causes unpredicted character font.
Release: 3.4

Description:
> Use of the '.TP' -man macro causes an unpredicted character font in
> formatted text, and appears to be specific to this macro.
> This occurs as shown below when the input file is printed
> using 'ptroff -man':

> Input File:

```
.sp 2i
.br
.TP
\fB\-f\fP\fIfontname\fP
.TP
\fB\-f\fP\fIxontname\fP
.br
\fB\-f\fP\fIfontname\fP
```

> Output File:

```
-ffontname
-fxontname
-ffontname
```

The output fonts should appear as follows (b=bold, i=italic),
and the second 'f' in the first line should not be in bold:

bbbiiiiiii
bbiiiiiiii
bbiiiiiiii

Work around:
Use '\fB\-f\fP\&\fIfontname\fP' instead of
'\fB\-f\fP\fIfontname\fP'. The \& breaks the
ligature processing without modifying the output.

Library

Reference Number: 1002934
Synopsis: mp(3x) doesn't free all the memory it allocates
Release: 3.2

Description:
A program which makes intensive use of the functions
in the multiple precision math library (such as
'madd( )', 'mult( )', 'mdiv( )') will eventually terminate
with a core dump, and the following message appears:

mp: no free space

A program which makes intensive use of the functions in the multiple
precision math library (madd( ), mult( ), mdiv( ), etc.) will
eventually terminate with a core dump and the message
"mp: no free space".

Reference Number: 1005314
Release: 3.2, 3.4

Description:
The C library function 'strtod( )' does not reliably return
a pointer to the character terminating the scan.

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

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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).

Reference Number: 1004199
Synopsis: The replyall command lists recipients incorrectly
Release: 3.2

Description:
When fabricating a mail message from a user on
another host (user@otherhost) that was sent to
four users whose host names are not specified
(a, b, c, d), read it on another machine
(mail -f msg), and then 'replyall', the first
three recipients are ignored and the fourth
recipient is listed four times.

make

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: 1005882
Synopsis: SunPro make(1) fails with dollar sign in TERMCAP
Release: 3.4

Description:
When the 'TERMCAP' environment variable is set
to the Sun supplied 'TERMCAP' entry for some
terminals, 'SunPro make(1)' fails and issues the
following message:

Fatal error: = missing from := transformation

Work around:
Modify '/etc/termcap' by changing the dollar signs
to '\044'.

Reference Number: 1006251
Synopsis: make gives "Hash table overflow"
Release: 3.2

Description:
In a large makefile that sets many environment variables,
'make' returns the following message:

Hash table overflow

General

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
> destination directiory.

Reference Number: 1002821
Synopsis: "ps -l" and "ps -u" options have different "SZ" values
Release: 2.0, 3.0, 3.2

Description:
> The output for the 'ps -l' and 'ps -u' options
> both have an item 'SZ'. The values differ but
> should not.

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.

Reference Number: 1003516
Synopsis: terminal option column is incorrect
Release: 3.2

Description:
> The following procedure will set terminal option column to
> 65428 in the shelltool 'rlogin'.
>
> > shelltool -Ws 898 511 -Wt
> > /usr/lib/fonts/fixedwidthfonts/sail.r.6
>
> 'vi' will then announce that the screen too large for
> the internal buffer.

Work around:
> Set the terminal option column to the appropriate column.

Reference Number: 1003563
Synopsis: tip doesn't renew uucp lock files
Release: 3.2

Description:
  'tip' doesn't update the change-time on a 'uucp' lock file. 'uucico'
  ignores any lock file older than 1.5 hours by re-using the line at the
  end of that time. Additionally, 'tip' does not know that a lock file
  that has not been changed in the past 1.5 hours is out of date.
Work around:
  Do not use 'tip' on a system running 'uucico', or don't use 'tip'
  connection for more than 1.5 hours.

Reference Number: 1004421
Synopsis: spell flags "workstation" as misspelled
Release: 3.2

Description:
  The 'spell' program flags 'workstation' as
  misspelled.

Reference Number: 1004668
Release: 3.2

Description:
  'config' produces a bad 'makefile' when both
  'IPCSEMAPHORE' and 'IPCSHMEM' are specified in
  the configuration file without specifying
  'IPCMESSAGE', such as in the following example:

  init_sysent.o ../OBJ/ipc_subr.o ../OBJ/ipc_subr.o
Work around:
  Edit extraneous '../OBJ/ipc_subr.o' out of 'makefile'.

Reference Number: 1005787
Synopsis: leave(1) does not work correctly from .login file
Release: 3.2

Description:
  When 'leave' is invoked from a '.login' file, the
  system prompts for, but will not accept, an entry.
  The following message is issued:

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When do you want to leave? usage: leave [[ ]hhmm]

Work-around for BugsList:
Use 'leave' from the command line.

Reference Number: 1005791
Synopsis: at command and bourne shell does not work
Release: 3.2

Description:
When in the bourne shell, the following command does not
function, and no files are placed on the 'at' queue:

echo 'command' | at 'time'

Reference Number: 1007231
Synopsis: chgrp -R unreliable for multiple directories
Release: 3.4

Description:
'chgrp' is unreliable when combinding the '-R'
(recursive) option with multiple (directory name)
arguments.
Work around:
'chgrp -R' one directory at a time.

Printer

Reference Number: 1002710
Synopsis: Problems and simple fixes for lpr and crew
Release: 3.0

Description:
"lprm" will not remove a queued file if you use hostnames that use
domains.

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: 1001901
Synopsis: Command line parser broken in /etc/mount
Release: 2.0beta

Description:
    'mount' has trouble recognizing flags and options
    in commands specified according to the 'usage:'
    message as follows:

        usage: mount -a[ft type]
           mount -p
           mount [-frvto type options] <fsname> <dir>

Program

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: problem with quota
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: 3.0

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: 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: 1002114
Synopsis: lookbib doesn't find anything unless indxbib run
Release: 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: 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.

Reference Number: 1003025
Synopsis: ^Z (Control-Z) when on(1C) is invoked is not recognized
Release: sununify1.0, 3.2

Description:
    When 'on(1C)' is invoked by running Unify's SQL over
    NFS mounts, entering a 'Control-Z' hangs the window.

Reference Number: 1004089
Synopsis: in.syslog: does not daemonize itself
Release: 3.4beta

Description:
    'in.syslog' does not daemonize itself. When
    'inews' starts it up and 'syslog' attaches to
    the console, it picks up the controlling 'tty'
    of the console.

Reference Number: 1005119
Synopsis: Flow-control problem when tip is run from tektool
Release: 3.2

Description:
    When an application uses 'tip(1)' from 'tektool(1)' to view displays
    generated by Pyramid hardware, the resulting display shows various
    errors.

Reference Number: 1005183
Synopsis: Find botches root scans over NFS after permission denied.
Release: 3.2

Description:
> If a 'find' scan is run as root over nfs, the 'find' will fail
> after it is first denied permission. It continues to report permission
> denied for everything else, even if the permissions are set to
> allow 'search'.

Reference Number: 1005671
Synopsis: whois has incorrect NICHOST defined
Release: 3.2

Description:
> In '/usr/ucb/whois', 'NICHOST' is defined as
> 'nic.sri.com', which is not a recognized machine
> on the ARPAnet. Thus, using 'whois' returns an
> error message.

Reference Number: 1006044
Synopsis: "chgrp" and "groups" determine group membership inconsistently
Release: 3.2

Description:
> When a user is listed as a member of a group in the 'YP'
> group database but is excluded from the same group listed
> in the local '/etc/group' file, 'groups' says he is a
> member while 'chgrp' says he is not.

Work around:
> Make sure the local '/etc/group' file and 'YP' group database
> is consistent.

Reference Number: 1006734
Synopsis: indent changes "=." to ".="
Release: 3.2, 3.5beta

Description:
> The indent program incorrectly changes '=.' to '.='.
> The indent program incorrectly changes a "=." to ".=", e.g., the line
>>   double EPSILON=.000001;
> becomes
>>   double   EPSILON .= 000001;

Reference Number: 1007060
Synopsis: indent chokes on long initialized strings.
Release: 3.4

Description:
    Initialized strings greater than 196 chars cause 'indent'
    to abort with the following error:

        Unterminated literal

Reference Number: 1007226
Synopsis: su does an openlog even when it won't be syslogging
Release: 3.4

Description:
    'su' does an 'openlog' even when it knows it will not
    perform a 'syslog'. This causes programs running 'su'
    with no control terminal to make the console their
    control terminal.

sendmail

Reference Number: 1004290
Synopsis: sendmail will not deliver null messages
Release: 3.2

Description:
    'sendmail' is inconsistent in the way it handles
    null messages. When sending a message that has no
    body, it will sometimes 'deliver' and sometimes it
    does not.
Work around:
    Split the aliases and use sub-aliases on the remote
    machines.

Reference Number: 1005190
Synopsis: Problem with UNIX security and sendmail
Release: 3.2

Description:
    'sendmail' allows UNIX security holes.
    Several security holes in sendmail have been fixed.

sun microsystems

uucp

Reference Number: 1002196
Synopsis: uucp Hayes modem support doesn't work as documented
Release: 2.0, 2.2, 3.4

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: 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.

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Revision History

Revision	Date	Comments
FINAL	March 1988	Third issue of the 1988 Software Technical Bulletin, developed by Software Information Services (SIS), Customer Services Division (CSD).
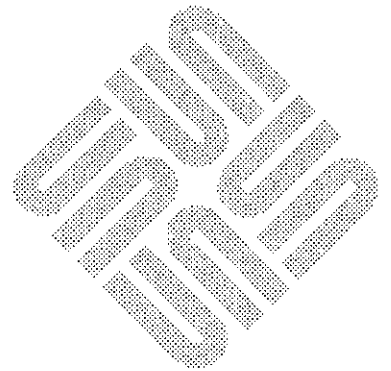
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