Subject: Bug in SunOS 4.1.1 affects IDL
Posted by ali on Mon, 15 Apr 1991 17:31:48 GMT
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15 April 1991

A bug in SunOS 4.1.1 can cause transfers of data from IDL to a disk file to fail. The relevant Sun Microsystems bug report, as retrieved from their Online Bugs Database is as follows:

```
Reference Number:    1052649
Synopsis:  write system call is returning EINTR

Category:  kernel
Subcategory:  ufs
Releases:  4.1.1

Hardware:  sun4c_60

Description:
      Customer's programs behave differently on 4.1.1 than
      on 4.1.  For example, a customer had a program that
      first sets up a signal handler for the SIGALRM signal,
      then sets up the ITIMER_REAL alarm to be posted.
      The program then goes into a loop writing data out
      to a file.  On 4.1 the kernel restarts the write(2)
      call. On 4.1.1, the kernel returns EINTR.
  WORK AROUND:
      Set ufs_WRITES to 0 with adb.
```

Since the problem is in the operating system kernel, it will not help to use earlier versions of IDL. Other programs may also exhibit the problem. Despite the Sun bug report, we believe the bug exists on all systems running SunOS 4.1.1, and not just the SparcStation 1 (sun4c_60). Here are the known options for dealing with this situation:

1) If you haven't upgraded to SunOS 4.1.1 yet, wait until Sun clears up this problem.

2) The bug surfaces when X windows is running, because our X windows driver uses the SIGALRM signal. Therefore, things will work until the first window is created. Note that once a window has been created, deleting it won't help because the timer keeps running.

2) Sun's software support people tell us that there is an unofficial kernel patch that fixes the problem, and that they

are working to get an official patch out. If you are under Sun software maintenance, you should contact them for additional details. Be sure to give them the bug reference number (1052649) when you call.

3) You can patch the kernel to set ufs_WRITES to 0 with adb, as suggested in the Sun bug report. Directions for doing that are supplied below. We suggest that you try to obtain the Sun patch before considering this approach.

Patching The Operating System Kernel

If you wish to patch your kernel, here is a sequence of steps to use. Please be aware of the following before proceeding:

- We have tried this procedure, and believe it is correct. It is supplied in good faith as a service to our customers. However, we cannot be responsible for any damage it causes to your system. Please read it carefully, and only apply if if you are convinced that it is correct.

- ALWAYS SAVE A COPY OF THE UNALTERED KERNEL. When applying any patches supplied by Sun, always start with the original kernel, and not the one that results from this procedure.

You should be very careful to issue these commands exactly as shown to avoid corrupting your system.

1) Log in as root. Take the system down to single user mode:

```
 # shutdown
```

2) Make a copy of your existing kernel for safe keeping.

```
 # cp /vmunix /vmunix_orig
```

3) Run adb on the kernel. Note that adb does not supply a prompt.

```
 # adb -w /vmunix
```

4) Change the value of ufs_WRITES to zero.

```
 _ufs_WRITES?W0
```

5) Exit adb.

```
 $q
```

6) Reboot your system.

```
 # fastboot
```

Note that you can always boot the copy of the kernel you saved in Step 2 if something should go wrong. From the console monitor prompt:

```
> b sd(0,0,0)vmunix_orig
```

Restoring The Original Kernel

If you wish to restore the original operating system kernel:

1) Log in as root. Take the system down to single
user mode:

```
 # shutdown
```

2) Move the patched kernel out of the way and rename the
saved one back:

```
 # mv /vmunix /vmunix_patched
 # mv /vmunix_orig /vmunix
```

3) Reboot your system.

```
 # fastboot
```

4) Once you've rebooted, you can delete the patched kernel.
Log in as root and issue the command:

```
 # rm /vmunix_patched
```

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