

1) SN_CNSL

To Start sn_cnsl:

```
sn_cnsl -S 1      Start the console with spy and show the last
                  few lines of output.
sn_cnsl -F 1      Start the console forced and show the last few
                  lines of output.
sn_cnsl -s 1      Same as -S but don't show lines.
sn_cnsl -f 1      Same as -F but don't show lines.
sn_cnsl -u        List all consoles.
sn_cnsl -w        List all consoles and who is spying.
```

While in sn_cnsl:

```
^ec.             Quit sn_cnsl.
^ecf             Force the console.
^ecs             Spy the console
```

2) SYSTEM CONSOLE

The system console starts with '-name system_console' so if you want to turn on logging set the following defaults in sppuser's .Xdefaults file.

```
system_console*logFile:      /tmp/Mylog
system_console*logging:      true
system_console*background:   white
system_console*font:          fixed
system_console*foreground:    black
```

Now, a word about .Xdefaults. An application looks for defaults in the following order. (from the X manpage).

- Resource Manager something like xrdb.
- Screen Resources also xrdb.
- Application Specific files /usr/lib/X11/appdefaults.
- XENVIRONMENT which if not set defaults to .Xdefaults

Sn.cnsld does not run as sppuser it run's as root, so if you don't load sppuser's .Xdefaults using xrdb, sn.cnsld is going to look in /.Xdefaults.

3) FILE SYSTEM

The server's buffer cache block size is 64K, and the default filesystem block size is 8K if you are looking into increasing the server's buffer cache, (it's a tunable) you might instead consider reformatting your file system to something larger than 8K.

4) TEST STATION CONSOLE

If running X on the test station, either as sppuser, or another user make sure there is a console 'xterm -C', this is not the 'System Console.'

5) BOOTING

From Test Station

- 1) Log into the test station as sppuser.
- 2) cd /spp/os This is where the kernel, server, and other needed files are stored.
- 3) If installing a new kernel, copy the new kernel to something like 'mach.new', and the server to 'server.new.'

```
% cp <where ever>/mach ./mach.new
% cp <where ever>/server ./server.new
```

There are probably two symbolic links mach and server, delete these links.

```
% ls -l
. . .
```

```
lrwxrwxrwx 1 sppuser 19 May 13 11:23 mach@ -> /spp/os/mach.ppp_r2
. . .
lrwxrwxrwx 1 sppuser 21 May 13 11:23 server@ -> /spp/os/server.ppp_r2
. . .
% rm mach server
```

Now link mach and server to your mach.new, and server.new

```
% ln -s mach.new mach
% ln -s server.new server
% ls -l
. . .
lrwxrwxrwx 1 sppuser 19 May 13 11:25 mach@ -> /spp/os/mach.new
. . .
lrwxrwxrwx 1 sppuser 21 May 13 11:25 server@ -> /spp/os/server.new
. . .
```

If they aren't symbolic links move mach to mach.orig, and server to server.orig, and then create the symbolic links.

```
% ls -l
. . .
-rwxr-x--- 1 sppuser 19 May 13 11:23 mach
. . .
-rwxr-x--- 1 sppuser 21 May 13 11:23 server
. . .
% mv mach mach.orig
% mv server server.orig
% ln -s mach.new mach
% ln -s server.new server
```

Now, you can boot the system.

```
% sppboot
```

From Disk

- 1) Log into the test station as sppuser.
- 2) cd /spp/os This is where the kernel, server, and other needed files are stored.
- 3) If you're installing a new kernel you can't boot from disk :)
- 4) Pull the primary loader, and obp from the EEPROM to memory, and then start obp.

```
% ccmu pull
% do_reset
```

- 5) You should get an 'ok' prompt in your System Console window (this will take a few seconds/minutes) when you get the prompt type boot in the System Console window.

If there is a prompt, and you can't type in the window. Try a 'Ctrl-e c f' to force the console.

6) PARTITIONING DISKS

```
% *diskutil -h*
```

```
DiskUtil: *sel d <disk>*          <- ex. sdlcntl
DiskUtil: *sh p*
```

```
Logical disk name: sdl
partition table: (space available for file systems = 2098744)
part  offset      size  | partition description  | flags
-----|-----|-----|-----|-----
a:      0K  1024000K  |                          |
```

```
b: 1024000K 1024000K |@
```

```
DiskUtil: *make p b size 0*  
DiskUtil: *sh p*
```

```
Logical disk name: sd1  
partition table: (space available for file systems = 2098744)  
part  offset      size  | partition description  | flags  
-----  
a:      0K 1024000K |
```

```
DiskUtil: *make p a size 2097152000*
```

```
DiskUtil: *sh p*
```

This should make your partition 2G. FYI 2097152000 is 2048000 * 1024.

To make a partition an additional swap partition you probably just need to do:

```
DiskUtil: set p <x> F D
```

This should set the D flag in the flags field.

Be sure to reboot, and then newfs any partitions you changed.

```
% newfs /dev/rdisk/sd<xp> scalios
```

And you should be done.

7) Labeling disk (tgm 8/19/94)

To label a disk on the SPP, use diskutil "MAP DISK":

```
DiskUtil: help map d  
The command:
```

```
MAP Disk <type> <node>:<ctrl>:<tgt>:<lun> To <logical-unit>
```

is used to set the logical unit name for a disk. The specified drive cannot have a current mapping. The newly mapped drive is selected automatically.

example:

```
map disk sd 0:2:3:0 to sd5
```

A patch has been created that can be placed in the OBP nvramrc 'file' using the nvedit command, and enabled using 'setenv use-nvramrc? true'.

The idea is to apply the patch on each node just to fix the bug without re-installation of OBP and subsequent reconfiguration of each machine.

This patch would have to be manually applied, once to each system that is using OBP 2.0 and later.

Once this step is done, the firmware patch is re-applied automatically to itself every time OBP boots.

The basic high-level sequence is:

- 1) boot to the ok prompt
- 2) use nvedit to create the patch
- 3) use nvstore to write the patch into nvramrc
- 4) use setenv to set the 'use-nvramrc?' flag to true
- 5) reboot obp.

The text of the patch is:

```
only forth also definitions
create fixed-table
d# 0 l,
d# 31 l,
d# 60 l,
d# 91 l,
d# 121 l,
d# 152 l,
d# 182 l,
d# 213 l,
d# 244 l,
d# 273 l,
d# 304 l,
d# 334 l,
d# 366 l,
fixed-table cum-days-per-month d# 52 cmove
patch noop 2dup ymdhms>norm
patch false add-day? ymdhms>norm
```

This text is entered using the 'nvedit' command that is documented in the OBP Reference Card. It is a line oriented editor.

^N goes to the next line
^C exits the editor.

nvstore commits the edit buffer to nv storage.

When you start up the nv editor, it will copy the current contents (if any) of the nvramrc into the buffer so you may see other lines of text in the buffer.

After using nvstore to store the patch into the nvramrc 'file', you need to use 'setenv' to enable the 'use-nvramrc?' flag so the nvramrc file will be executed when obp next boots. (If nvalias has been done, this flag will already be true, so no further action than reboot is needed.)

Here is an example sequence.

```
Exemplar SPP1000/XA, OBP Release 2.0, compiled 95/11/13 09:34:31
8 CPUs, 384 MB memory installed, 0 MB CTI cache, SIOP1 installed.
Complex Serial Number: 65551, Node Serial Number: 1999770.
```

Network address 0:0:0:0:0:0, Internet# 0.0.0.0.

```
[0:0] ok
[0:0] ok nvedit
  0: only forth also definitions
  1: create fixed-table
  2: d# 0 1,
  3: d# 31 1,
  4: d# 60 1,
  5: d# 91 1,
  6: d# 121 1,
  7: d# 152 1,
  8: d# 182 1,
  9: d# 213 1,
 10: d# 244 1,
 11: d# 273 1,
 12: d# 304 1,
 13: d# 334 1,
 14: d# 366 1,
 15: fixed-table cum-days-per-month d# 52 cmove
 16: patch noop 2dup ymdhms>norm
 17: patch false add-day? ymdhms>norm
 18: ^C
[0:0] ok nvstore
[0:0] ok setenv use-nvramrc? true
use-nvramrc? =      true
[0:0] ok reset
```

--

```
=====
Tom_Murphy@convex.com   | I love my job, Happily married,
HP Convex Technology Center | Three wonderful children :
Richardson, Texas      | Well two out of three ain't bad :-)
```

Volume.WorkWeek.Section Title

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- 2.47.1 No Issue

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Here's some info on changing tunables on SPP. Currently there are 2 tunable files. It depends on where you boot from as to which tunable file should get updated:

1. If booting off the test station, edit /spp/os/tunables
2. If booting off disk, edit /os/tunables

After the appropriate file is edited, the machine needs to be rebooted.

It is safest however to edit BOTH files incase you change where you boot from.

Here is the file shipped to the first customers:

```
-----  
# Percent of memory dedicated to the filesystem buffer cache  
Fileserver,buffer_cache_percent:1[0..15]=10:  
  
# Have all servers panic gracefully when any server panics (0:off, 1:on)  
Server,distribute_panic:1[0..15]=1:  
  
# Default stack size limit  
Server,dflssiz:desc=Default Stack Size Limit:1=8M:  
  
# Maximum stack size adjustable via rlimit  
Server,maxssiz:desc=Maximum Stack Size Limit:1=512M:  
  
# Default size of data segment  
Server,dfldsiz:desc=Default Data Size Limit:1=256M:  
  
# Maximum size of data segment adjustable via rlimit  
Server,maxdsiz:desc=Maximum Data Size Limit:1=512M:  
-----
```

Bad Primary Loader Checksum

=====

The following error message from do_reset indicates that the checksum for the primary loader has gone bad.

```
austin:/users/sppuser$ do_reset
do_reset:  attempting a level 3 reset of node 0
do_reset:  waiting 2 seconds to be sure reset is complete.
do_reset:  checking for completion on node 0
do_reset:  STATUSMU value of 0x00000694 indicates an error condition, node 0
do_reset:  TRACEMU: 0x00001200  INFO_MU: 0x00000001
errno is 0x694 (1684)
+++> 166
<Tue Apr 19 08:19:53 1994> info:0x456a0403
do_reset:0.0.37.200:../do_reset.c:290
```

These are the steps for handling this problem:

- 1) Create a copy of the current primary loader for analysis.

```
austin:/users/sppuser$ sppedsh
sppedsh$ mget -b 0xf0840000 65536 > /tmp/pl
sppedsh$ exit
```

- 2) Reload the primary loader from disk.

```
austin:/users/sppuser$ load_eprom 0 -p /spp/firmware/pl
```

- 3) Send the copy of the bad primary loader (/tmp/pl) to the TAC.