

Changing the Screen Resolution



This chapter describes how to configure the ZX Graphics Accelerator to work properly with different monitors by changing the screen resolution. You change screen resolution through the use of the `leoconfig` program. See the `leoconfig(8)` man page for more information on this program than is described here.

Note - This information is current as of the Solaris 2.5.1 system software. For the most current information on `leoconfig`, see *Platform Notes: SMCC Frame Buffers*, available on the version of AnswerBook that came with your system software.

Overview

There are two elements to `leoconfig`: the `leoconfig` program and the `leoconfig` script. The `leoconfig` program initializes the ZX Graphics Accelerator and downloads microcode from the host CPU. The `leoconfig` program is normally run as a part of the `/etc/init.d/leoconfig` script to download the ZX microcode file and to complete ZX installation.

The `leoconfig` program is also useful to change the default screen configuration to some other resolution, including stereo. The default screen resolution for the ZX Graphics Accelerator is defined by the monitor ID code, read from the monitor. If the monitor returns an unknown ID code, the ZX Graphics Accelerator defaults to a screen resolution of 1152×900 at 66 Hz.

While this resolution works with all of the monitors available for the workstations supplied by Sun, some monitors are able to take advantage of other resolutions available on the ZX Graphics Accelerator.

There are two ways to implement the change in screen resolution:

- Temporarily, by running the `leoconfig` program
- So that it will always boot up in the new resolution, by modifying the `leoconfig` script file

Supported Screen Resolutions

Table 8-1 lists the screen resolutions the ZX Graphics Accelerator supports.

Table 8-1 ZX Supported Screen Resolutions

Screen Resolution	Vertical Refresh Rate	Description
1280 × 1024	67 Hz	Non-interlaced
1280 × 1024	76 Hz	Non-interlaced
1152 × 900	76 Hz	Non-interlaced
1152 × 900	66 Hz	Non-interlaced
1024 × 768	76 Hz	Non-interlaced
1024 × 768	60 Hz	Non-interlaced
960 × 680	108 Hz	Stereo, non-interlaced, 54 Hz field rate per eye
960 × 680	112 Hz	Stereo, non-interlaced, 56 Hz field rate per eye
770 × 575	50 Hz	Interlaced – PAL
640 × 480	59.94 Hz	Interlaced – NTSC

Changing the Screen Resolution Temporarily

To change the screen resolution temporarily:

1. Exit from the window system.

If you are in a windowing environment, exit from it and wait for the system prompt to appear.

2. Become superuser (root).

```
example% /usr/bin/su
Password: Type your superuser password. The password does not appear on the screen.
```

3. Type the following command:

```
example# /etc/opt/SUNWleo/bin/leoconfig -M monitor_type
```

where *monitor_type* is one of the values listed in Table 8-2. See also Table 1-1 on page 3.

Table 8-2 Monitor Types

monitor_type	Screen Resolution
1280_76	1280 × 1024 @ 76 Hz, non-interlaced
1280_67	1280 × 1024 @ 67 Hz, non-interlaced
1152_76	1152 × 900 @ 76 Hz, non-interlaced
1152_66	1152 × 900 @ 66 Hz, non-interlaced
1024_76	1024 × 768 @ 76 Hz, non-interlaced
1024_60	1024 × 768 @ 60 Hz, non-interlaced
stereo_108	960 × 680 @ 108 Hz non-interlaced stereo, 54 Hz field rate per eye
stereo_114	960 × 680 @ 112 Hz, non-interlaced stereo, 56 Hz field rate per eye
pal	770 × 575 @ 50 Hz, interlaced (PAL)
ntsc	640 × 480 @ 60 Hz, interlaced (NTSC)
default	The default resolution, defined by the monitor sense pins

For example, to change screen resolution to stereo at a 108 Hz vertical refresh rate, enter the following:

```
example# /etc/opt/SUNWleo/bin/leoconfig -M stereo_108
```

4. Restart the window system.

Modifying the leoconfig Initialization File

To change the leoconfig script so that the system boots up in the new screen resolution, edit the leoconfig script in the /etc/init.d/leoconfig file, as follows:

1. Become superuser (root).

```
example% /usr/bin/su  
Password: Type your superuser password. The password does not appear on the screen.
```

2. Open the leoconfig file with the editor.

For example, to use the vi editor:

```
example# vi /etc/init.d/leoconfig
```

3. Search for the “MONTYPE=” string in the file.

This string is usually one of the first lines in the file. You should see the lines shown on the following page.

There is one `MONTYPE=` line for each available screen configuration. By default, all but one of the lines are commented out (with the `#` character).

```
MONTYPE="-m default"
# MONTYPE="-m 1280_76"
# MONTYPE="-m 1280_67"
# MONTYPE="-m 1152_76"
# MONTYPE="-m 1152_66"
# MONTYPE="-m 1024_76"
# MONTYPE="-m 1024_60"
# MONTYPE="-m stereo_108"
# MONTYPE="-m stereo_114"
# MONTYPE="-m pal"
# MONTYPE="-m ntsc"
```

4. Comment out the line that specifies the current screen configuration.

In the above example, you would comment out the `"-m default"` line, as follows:

```
# MONTYPE="-m default"
```

5. Delete the comment out character (#) from the line that supports your monitor.

The supported monitor types are listed in Table 8-1 on page 66. See also Table 1-1 on page 3.

For example, to change the screen resolution from the default to the higher resolution of 1280×1024 at 76 Hz, delete the comment (the `#` character) from the `MONTYPE="-m 1280_76"` line. The file should now look like this:

```
# MONTYPE="-m default"
MONTYPE="-m 1280_76"
# MONTYPE="-m 1280_67"
# MONTYPE="-m 1152_76"
# MONTYPE="-m 1152_66"
# MONTYPE="-m 1024_76"
# MONTYPE="-m 1024_60"
# MONTYPE="-m stereo_108"
# MONTYPE="-m stereo_114"
# MONTYPE="-m pal"
# MONTYPE="-m ntsc"
```

6. Save the file and exit the editor.

In vi, press Esc and type the following:

```
:wq
```

7. Save all your work.

Refer to Chapter 6, “Working with Documents,” in the *Sun System User’s Guide* for more information about ending a work session and saving your files. If you do not save your work, you could lose it when you reboot the system.

8. Exit from the window system.

If you are in a windowing environment, exit from it and wait for the system prompt to appear.

9. Become superuser (root) again.

```
example% /usr/bin/su  
Password: Type your superuser password. The password does not appear on the screen.
```

10. Execute the leoconfig program.

Enter the following command:

```
example# /etc/init.d/leoconfig
```

11. Exit superuser and restart the window system.

The system should now be in the new screen resolution.

Restrictions

The ZX Graphics Accelerator has some limitations on its ability to support alternate screen resolutions. If you are using a Sun monitor and not changing the default screen resolution by way of the `leoconfig` program, you can disregard the following restrictions.

Using a Non-Sun Monitor as Console

If you use a non-Sun monitor as the workstation console, the monitor you use must meet both of the following requirements:

1. The monitor must support a screen resolution of 1152×900 at 66 Hz (the default screen resolution for a non-Sun monitor).
2. The monitor must not drive the monitor ID sense lines, or must conform to the sense codes and restrictions listed in Table 1-1 on page 3.

Restrictions to Changing the Default Screen Resolution

There are restrictions to changing the default screen resolution with the `leoconfig` program.

When you modify the `leoconfig` initialization program to change from the default screen resolution to a resolution of 1024×900 or less, excluding stereo, you will be unable to see the bottom portion of the display area during boot up before the window system starts. This means that you may not be able to see all of the start-up messages or to see what you are typing when you log in. Specifically, to avoid this problem you must not set the monitor type to any of the following:

```
1024_76
1024_60
pal
ntsc
```

For those applications that require the lower resolutions, such as `pal` and `ntsc`, use a two-headed system. With a two-headed system where the ZX monitor is not used as the boot console, you may operate the ZX monitor in any of the supported screen resolutions.

