บทที่ 6 การติดตั้งและเซ็ต X-Windows

การกำหนดค่าให้กับ X – Windows

การ Configure X windows สำหรับ Slackware ด้วยวิธีนี้ค่อนข้างยุ่งยาก ก่อนเริ่มทำการ Config ควรที่จะตรวจระบบว่าใช้การ์ดแสดงผลชนิดใด จำนวนหน่วยความจำเท่าไร เพื่อเป็นข้อมูล ใช้คำสั่งดังนี้

```
linux:~# SuperProbe
```

จะปรากฏผลดังนี้

SuperProbe Version 2.15 (4 August 1997) (c) Copyright 1993,1994 by David Wexelblat dwex@xfree86.org This work is derived from the 'vgadoc2.zip' and 'vgadoc3.zip' documentation packages produced by Finn Thoegersen, and released with all appropriate permissions having been obtained. Additional information obtained from 'Programmer's Guide to the EGA and VGA, 2nd ed', by Richard Ferraro, and from manufacturer's data books The author welcomes bug reports and other comments mailed to the electronic mail address above. In particular, reports of chipsets that this program fails to correctly detect are appreciated.Before submitting a report, please make sure that you have the latest version of SuperProbe (see http://www.xfree86.org/FAQ). WARNING – THIS SOFTWARE COULD HANG YOUR MACHINE. READ THE SuperProbe. 1 MANUAL PAGE BEFORE RUNNING THIS PROGRAM. INTERRUPT WITHIN FIVE SECONDS TO ABORT!

หลังจากรอชั่วขณะหนึ่ง ผลการตรวจสอบจะออกมาดังนี้

First video: Super-VGA

Chipset: ATI 264CT (Port Probed)

Memory: 2048 Kbytes

RAMDAC: ATI Mach64 integrated 15/16/24/32-bit DAC w/clock (with 6-bit wide lookup tables (or in 6-bit mode))

(programmable for 6/8-bit wide lookup tables)

Attached graphics coprocessor:

Chipset: ATI Mach64

Memory: 2048 Kbytes

เริ่มทำการติดตั้ง X - Window (xf86config)

ใช้คำสั่งดังนี้

```
linux:~# xf86config
```

จะมีข้อความปรากฏ ในลักษณะดังนี้

This program will create a basic XF86Config file, based on menu selections you make. The XF86Config file usually resides in /usr/X11R6/lib/X11 or /etc/X11. A sample XF86Config file is supplied with XFree86; it is configured for a standard VGA card and monitor with 640x480 resolution. This program will ask for a pathname when it is ready to write the file. You can either take the sample XF86Config as a base and edit it for your configuration, or let this program produce a base XF86Config file for your configuration and fine-tune it. Refer to /usr/X11R6/lib/X11/doc/README.Config for a detailed overview of the configuration process.For accelerated servers (including accelerated drivers in the SVGA server), there are many chipset and card-specific options and settings. This program does not know about these. On some onfigurations some of these settings must be specified. Refer to the server man pages and chipset-specific READMEs. Before continuing with this program, make sure you know the chipset and amount of video memory on your video card. SuperProbe can help with this.It is also helpful if you know what server you want to run.

```
Press enter to continue, or ctrl-c to abort.
```

ให้กดปุ่ม enter

The directory '/usr/X386/bin' exists. You probably have an old version of XFree86 installed (XFree86 3.1 installs in '/usr/X11R6' instead of '/usr/X386'). it is important that diredtory '/usr/X11R6' is present in your search path, *before* any occurrence of '/usr/X386/bin'. If you have installed X program binaries that are not in the base XFree86 destribution in '/usr/X386/bin'. you can keep the diredtory in your path as long as it is after '/usr/X11R6'. your PAHT is currently set as follows: /usr/local/sbin:/usr/local/bin:/sbin:..... Note that the
X binary diredtory in your path may be a symbolic link. in that case you could modify the symbolic link to point to the new binaries. Example: 'rm -f /usr/bin/X11; ln -s /usr/X11R6/bin /usr/bin/X11', if the link is '/usr/bin/X11' .

Make sure the path is OK before continuing
Press enter to continue, or ctrl-c to abort. **ให้กดปุ่ม enter**

First specify a mouse protocol type. Choose one from the following list:

1. Microsoft compatible (2-button protocol)
2. Mouse Systems (3-button protocol)
3. Bus Mouse
4. PS/2 Mouse
5. Logitech Mouse (serial, old type, Logitech protocol)
6. Logitech MouseMan (Microsoft compatible)
7. MM Series
8. MM HitTablet
9. Microsoft IntelliMouse

If you have a two-button mouse, it is most likely of type 1, and if you have a three-button mouse, it can probably support both protocol 1 and 2. There are two main varieties of the latter type: mice with a switch to select the protocol, and mice that default to

1 and require a button to be held at boot-time to select protocol

2. Some mice can be convinced to do 2 by sending special sequence to the serial port (see the ClearDTR/ClearRTS options).

```
Enter a protocol number: 4
```

ถ้าใช้ Mouse ชนิด PS/2 ให้กดปุ่มเลข 4 แล้ว enter
ถ้าใช้ชนิดอื่น ๆให้เลือกที่ใกล้เคียงที่สุด

If your mouse has only two buttons, it is recommended that you enable Emulate 3 Buttons. Please answer the following question with either 'y' or 'n'. Do you want to enable Emulate 3 Buttons? y

ให้กดปุ่ม y แล้ว enter

Now give the full device name that the mouse is connected to, for example /dev/tty00. Just pressing enter will use the default, /dev/mouse.

```
Mouse device:
```

ให้กดปุ่ม Enter

Beginning with XFree86 3.1.2D, you can use the new 11R6.1 XKEYBOARD extension to manage the keyboard layout. If you answer 'n' to the following question, the server will use the old method, and you have to adjust your keyboard layout with xmodmap.

```
Please answer the following question with either 'y' or 'n'.
Do you want to use XKB? y
```

กดปุ่ม y แล้ว Enter

The folling dialogue will allow you to select from a list of already preconfigured keymaps. If you don't find a suitable key map in the list, the program will try to combine a keymap from additional information you are asked the. Such akeymap is by default untested and may require manual tuinig. Please report success or required changes for such a keymap to XFREE86@XFREE86.ORG for addition to the list of reconfigured keymaps in the future.

```
Press enter to continue, or ctrl-c to abort.
```

ให้กดปุ่ม enter

List of preconfigured keymaps:

1. Standard 101-key, US encoding

2. Microsoft Natural, US encoding

3. KeyTronic FlexPro, US encoding

4. Standard 101-key, US encoding with ISO9995-3 extensions

5. Standard 101-key, German encoding

6. Standard 101-key, French encoding

7. Standard 101-key, Thai encoding

8. Standard 101-key, Swiss/German encoding

9. Standard 101-key, Swiss/French encoding

10. None of the above

Enter a number to choose the keymap.

ให้กดปุ่มหมายเลข 7 แล้ว Enter

Now we want to set the specifications of the monitor. The two critical parameters are the vertical refresh rate, which is the rate at which the the whole screen is refreshed, and most ortantly the horizontal sync rate, which is the rate at which scanlines are displayed.The valid range for horizontal sync and vertical sync should be documented in the manual of your monitor. If in doubt, check the monitor database /usr/X11R6/lib/X11/doc/Monitors to see if your monitor is there.

Press enter to continue, or ctrl-c to abort.

ให้กดปุ่ม Enter

You must indicate the horizontal sync range of your onitor. You can either select one of the predefined ranges below that correspond to industry- standard monitor types, or give a pecific range. It is VERY IMPORTANT that you do not specify a monitor type with a horizontal sync range that is beyond the capabilities of your monitor. If in doubt, choose a conservative setting. hsync in kHz; monitor type with characteristic modes

1. 31.5; Standard VGA, 640x480 @ 60 Hz
2. 31.5 - 35.1; Super VGA, 800x600 @ 56 Hz
3. 31.5, 35.5; 8514 Compatible,1024x768 @ 87 Hz Interlaced (no 800x600)
4. 31.5, 35.15, 35.5; Super VGA, 1024x768 @ 87 Hz Interlaced, 800x600 @ 56Hz
5. 31.5 - 37.9; Extended Super VGA, 800x600 @ 60 Hz, 640x480 @ 72 Hz
6. 31.5 - 48.5; Non-Interlaced SVGA, 1024x768 @ 60 Hz, 800x600 @ 72 Hz
7. 31.5 - 57.0; High Frequency SVGA, 1024x768 @ 70 Hz
8. 31.5 - 64.3; Monitor that can do 1280x1024 @ 60 Hz
9. 31.5 - 79.0; Monitor that can do 1280x1024 @ 74 Hz
10. 31.5 - 82.0; Monitor that can do 1280x1024 @ 76 Hz
11. Enter your own horizontal sync range

Enter your choice (1-11): 4

ให้กดปุ่มหมายเลข 4 แล้ว enter ตามข้อมูลที่ได้

(แล้วแต่ชนิดของการ์ดแสดงผล)

You must indicate the vertical sync range of your monitor. You can either select one of the predefined ranges below that correspond to industry- standard monitor types, or give a pecific range. For interlaced modes,the number that counts is the high one (e.g. 87 Hz rather than 43 Hz).

1. 50-70
2. 50-90
3. 50-100
4. 40-150
5. Enter your own vertical sync range

Enter your choice:

ให้กดปุ่มหมายเลข 4 แล้ว enter ตามข้อมูลที่ได้

(แล้วแต่ชนิดของการ์ดแสดงผล)

The strings are free-form, spaces are allowed.

Enter an identifier for your monitor definition: **กดปุ่ม enter**

Enter the vendor name of your monitor: **กดปุ่ม enter**

Enter the model name of your monitor: **กดปุ่ม enter**

Now we must configure video card specific settings. At this point you can choose to make a selection out of a database of video card definitions.Because there can be variation in Ramdacs and clock generators even between cards of the same model, it is not sensible to blindly copy the settings (e.g. a Device section). For this reason, after you make a selection, you will still be asked about the components of the card,with the settings from the chosen database entry presented as a strong hint.The database entries include information about the chipset, what server to run, the Ramdac and ClockChip, and comments that will be included in the Device section. However, a lot of definitions only hint about what server to run (based on the chipset the card uses) and are untested.If you can't find your card in the database, there's nothing to worry about.You should only choose a database entry that is exactly the same model as

your card; choosing one that looks similar is just a bad idea (e.g. a GemStone Snail 64 may be as different from a GemStone Snail 64 + in terms of hardware as can be).

Do you want to look at the card database?

ให้กดปุ่ม y แล้ว Enter จนกว่าจะถึง การ์ดแสดงผล ที่มีอยู่ในเครื่อง

0 2 the Max MAXColor S3 Trio64V+ S3 Trio64V+

1. 928Movie S3 928
2. AGX (generic) AGX-014/15/16
3. ALG-5434(E) CL-GD5434
4. ASUS PCI-AV264CT ATI-Mach64
5. ASUS PCI-V264CT ATI-Mach64
6. ASUS Video Magic PCI V864 S3 864
7. ASUS Video Magic PCI VT64 S3 Trio64

8. ATI 3D Pro Turbo ATI-Mach64

9. ATI 3D Xpression ATI-Mach64

10. ATI 3D Xpression+ PC2TV ATI-Mach64

11. ATI 8514 Ultra (no VGA) ATI-Mach8

12. ATI All-in-Wonder ATI-Mach64

13. ATI Graphics Pro Turbo ATI-Mach64

14. ATI Graphics Pro Turbo 1600 ATI-Mach64

15. ATI Graphics Ultra ATI-Mach8

16. ATI Graphics Ultra Pro ATI-Mach32

17. ATI Graphics Xpression with 68875 RAMDAC ATI-Mach64

Enter a number to choose the corresponding card definition.
Press enter for the next page, q to continue configuration.

กดปุ่ม enter เพื่อแสดงหน้าถัดไป

18. ATI Graphics Xpression with AT&T 20C408 RMDAC ATI-Mach64

19. ATI Graphics Xpression with CH8398 RAMDAC ATI-Mach64

20. ATI Graphics Xpression with Mach64 CT (264CT) ATI-Mach64

21. ATI Graphics Xpression with STG1702 RAMDAC ATI-Mach64

22. ATI Mach64 ATI-Mach64

23. ATI Mach64 3D RAGE II+, Internal RAMDAC ATI-Mach64

24. ATI Mach64 3D RAGE II, Internal RAMDAC ATI-Mach64

25. ATI Mach64 CT (264CT), Internal RAMDAC ATI-Mach64

26. ATI Mach64 GT (264GT), aka 3D RAGE, Internal RAMDAC ATI-Mach64

27. ATI Mach64 VT (264VT), Internal RAMDAC ATI-Mach64

28. ATI Mach64 with AT&T 20C408 RAMDAC ATI-Mach64

29. ATI Mach64 with CH8398 RAMDAC ATI-Mach64

30. ATI Mach64 with IBM RGB514 RAMDAC ATI-Mach64

31. ATI Ultra Plus ATI-Mach32

32. ATI Video Xpression ATI-Mach64

33. ATI Win Boost with AT&T 20C408 RAMDAC ATI-Mach64

34. ATI Win Boost with CH8398 RAMDAC ATI-Mach64

35. ATI Win Boost with Mach64 CT (264CT) ATI-Mach64

Enter a number to choose the corresponding card definition.
Press enter for the next page, q to continue configuration.

พบการ์ดแสดงผลแล้ว ให้กดปุ่ม 25 แล้ว Enter

(แต่ละเครื่องจะไม่เหมือนกันเลือกตามข้อตามข้อมูลที่ได้)

Your selected card definition:

Identifier: ATI Mach64 CT (264CT), Internal RAMDAC

Chipset: ATI-Mach64

Server: XF86_Mach64

Do NOT probe clocks or use any Clocks line.

Press enter to continue, or ctrl-c to abort.

ให้กดปุ่ม Enter

Now you must determine which server to run. Refer to the manpages and other documentation. The following servers are available (they may not all be installed on your system):

1. The XF86_Mono server. This a monochrome server that should work on any VGA-compatible card, in 640x480 (more on some SVGA chipsets).
2. The XF86_VGA16 server. This is a 16-color VGA server that should work on any VGA-compatible card. ble card.
3. The XF86_SVGA server. This is a 256 color SVGA server that supports a number of SVGA chipsets. On some chipsets it is accelerated or supports higher color depths.
4. The accelerated servers. These include XF86_S3, F86_Mach32, F86_Mach8, XF86_8514, XF86_P9000, XF86_AGX, XF86_W32,

XF86_Mach64, XF86_I128 and XF86_S3V. These four server types correspond to the four different "Screen" sections in XF86Config vga2,vga16, svga, accel).

5. Choose the server from the card definition, XF86_Mach64.

```
Which one of these screen types do you intend to run by default (1-5)? 5
```

ให้กดปุ่ม หมายเลข 5 แล้ว Enter

The server to run is selected by changing the symbolic link 'X'. For example,'rm /usr/X11R6/bin/X; ln - s/usr/X11R6/bin/XF86_SVGA /usr/X11R6/bin/X' selects
the SVGA server.

```
Please answer the following question with either 'y' or 'n'.
Do you want me to set the symbolic link? y
```

ให้กดปุ่ม y แล้ว Enter

```
Do you want to set it in /var/X11R6/bin?
```

ให้กดปุ่ม y แล้ว Enter

Now you must give information about your video card. This will be used for the "Device" section of your video card in XF86Config.You must indicate how much video memory you have. It is probably a good idea to use the same approximate amount as that detected by the server you intend to use. If you encounter problems that are due to the used server not supporting the amount memory you have (e.g. ATI Mach64 is limited to 1024K with the SVGA server), specify the maximum amount supported by the server.How much video memory do you have on your video card:

1. 256K
2. 512K
3. 1024K
4. 2048K

5. 4096K

6. Other

Enter your choice:

ในกรณีนี้ ให้เลือก 4 แล้ว Enter (แต่ละเครื่องจะไม่เหมือนกันเลือกตามข้อตามข้อมูลที่ได้)

You must now enter a few identification/description strings, namely an identifier, a vendor name, and a model name. Just pressing enter will fill in default names (possibly from a card definition).Your card definition is ATI Mach64 CT (264CT), Internal RAMDAC.The strings are free-form, spaces are allowed.

Enter an identifier for your video card definition: **ให้กดปุ่ม Enter**

You can simply press enter here if you have a generic card, or want to describe your card with one string.

Enter the vendor name of your video card: **ให้กดปุ่ม Enter**

Enter the model (board) name of your video card: **ให้กดปุ่ม Enter**

The RAMDAC setting only applies to the S3, AGX, W32 servers, and some drivers in the SVGA servers. Some RAMDAC's are auto-detected by the server.The detection of a RAMDAC is forced by using a Ramdac "identifier" line in the Device section. The identifiers are shown at the right of the following table of RAMDAC types:

1. AT&T 20C490 (S3 and AGX servers, ARK driver) att20c490
2. AT&T 20C498/21C498/22C498 (S3, autodetected) att20c498
3. AT&T 20C409/20C499 (S3, autodetected) att20c409
4. AT&T 20C505 (S3) att20c505
5. BrookTree BT481 (AGX) bt481
6. BrookTree BT482 (AGX) bt482
7. BrookTree BT485/9485 (S3) bt485
8. Sierra SC15025 (S3, AGX) sc15025
9. S3 GenDAC (86C708) (autodetected) s3gendac

10. S3 SDAC (86C716) (autodetected) s3_sdac

11. STG-1700 (S3, autodetected) stg1700

12. STG-1703 (S3, autodetected) stg1703

```
Enter a number to choose the corresponding RAMDAC.
Press enter for the next page, q to quit without selection of a RAMDAC.
```

ให้กดปุ่ม q แล้ว Enter

A Clockchip line in the Device section forces the detection of a programmable clock device. With a clockchip enabled, any required clock can be programmed without requiring probing of clocks or a Clocks line. Most cards don't have a programmable clock chip.

Choose from the following list:

1. Chrontel 8391 ch8391
2. ICD2061A and compatibles (ICS9161A, DCS2824) Icd2061a
3. ICS2595 ics2595
4. ICS5342 (similar to SDAC, but not completely compatible) ics5342
5. ICS5341 ics5341
6. S3 GenDAC (86C708) and ICS5300 (autodetected) s3gendac
7. S3 SDAC (86C716) s3_sdac
8. STG 1703 (autodetected) stg1703
9. Sierra SC11412 sc11412
10. TI 3025 (autodetected) ti3025
11. TI 3026 (autodetected) ti3026
12. IBM RGB 51x/52x (autodetected) ibm_rgb5xx

```
Just press enter if you don't want a Clockchip setting.
What Clockchip setting do you want (1-12)?
```

ให้กดปุ่ม Enter

For most configurations, a Clocks line is useful since it prevents the slow and nasty sounding clock probing at server start-up. Probed clocks are displayed at server startup, along with other server and hardware configuration info. You can save this information in a file by running 'X –probeonly 2>output_file'. Be warned that clock probing is inherently imprecise; some clocks may be slightly too high (varies per run).At this point I can run X -probeonly, and try to extract the clock information from the output. It is recommended that you do this yourself and add a clocks line (note that the list of clocks may be split over multiple Clocks lines) to your Device section afterwards. Be aware that a clocks line is notappropriate for drivers that have a fixed set of clocks and don't probe by default (e.g. Cirrus). Also, for the P9000 server you must simply specify clocks line that matches the modes you want to use. For the S3 server with a programmable clock chip you need a 'ClockChip' line and no Clocks line.

You must be root to be able to run X -probeonly now.

```
The card definition says to NOT probe clocks.
Do you want me to run 'X -probeonly' now? n
```

ให้กดปุ่ม n แล้ว Enter

For each depth, a list of modes (resolutions) is defined. The default resolution that the server will start-up with will be the first listed mode that can be supported by the monitor and card.

Currently it is set to:

"640x480" "800x600" "1024x768" "1280x1024" for 8bpp

"640x480" "800x600" "1024x768" for 16bpp

"640x480" "800x600" for 24bpp

"640x480" "800x600" for 32bpp

Note that 16, 24 and 32bpp are only supported on a few configurations. Modes that cannot be supported due to monitor or clock constraints will be automatically skipped by the server.

1. Change the modes for 8bpp (256 colors)
2. Change the modes for 16bpp (32K/64K colors)
3. Change the modes for 24bpp (24-bit color, packed pixel)
4. Change the modes for 32bpp (24-bit color)
5. The modes are OK, continue.

Enter your choice: 1

ให้กดปุ่ม หมายเลข 1 แล้ว enter

Select modes from the following list:

1. "640x400"
2. "640x480"
3. "800x600"
4. "1024x768"
5. "1280x1024"
6. "320x200"
7. "320x240"
8. "400x300"
9. "1152x864"
10. "1600x1200"
11. "1800x1400"
12. "512x384"

Please type the digits corresponding to the modes that you want to select. For example, 432 selects "1024x768" "800x600" "640x480", with a default mode of 1024x768.

Which modes? 432

ให้เลือก Mode การแสดงผลได้ 3 ระดับ ในที่นี้ ให้กดปุ่ม 432 แล้ว enter

You can have a virtual screen (desktop), which is screen area that is larger than the physical screen and which is panned by moving the mouse to the edge of the screen. If you don't want virtual desktop at a certain resolution, you cannot have modes listed that are larger. Each color depth can have a differently-sized virtual screen

```
Please answer the following question with either 'y' or 'n'.
Do you want a virtual screen that is larger than the physical screen?n
```

ให้กดปุ่ม n แล้ว enter

For each depth, a list of modes (resolutions) is defined. The default resolution that the server will start-up with will be the first listed mode that can be supported by the monitor and card.

Currently it is set to:

"640x480" "800x600" "1024x768" "1280x1024" for 8bpp

"640x480" "800x600" "1024x768" for 16bpp

"640x480" "800x600" for 24bpp

"640x480" "800x600" for 32bpp

Note that 16, 24 and 32bpp are only supported on a few configurations.Modes that cannot be supported due to monitor or clock constraints will be automatically skipped by the server.

1. Change the modes for 8bpp (256 colors)
2. Change the modes for 16bpp (32K/64K colors)
3. Change the modes for 24bpp (24-bit color, packed pixel)
4. Change the modes for 32bpp (24-bit color)
5. The modes are OK, continue.

```
Enter your choice: 5
```

ถ้าต้องการกำหนดค่าใน mode 16 bpp ให้เลือก 2 mode 24 bpp เลือก 3 แล้วทำซ้ำ กับขั้นตอนข้างต้น ถ้ากำหนดค่าเสร็จแล้วและต้องการออก
ให้กดปุ่มหมายเลข 5 แล้ว enter

I am going to write the XF86Config file now. Make sure you don't accidently overwrite a previously configured one.

```
Shall I write it to /etc/X11/XF86Config?
```

ให้กดปุ่ม y แล้ว enter

จากนั้นจะกลับไปที่ linux prompt ให้ทดลองใช้คำสั่งเพื่อเรียก xwindow ดังนี้

```
linux:~# startx
```

<u>ใบงานที่ 6</u>

ชื่อ…… ชั้น……

เลขที่……..คะแนน…….

1. ครูให้นักเรียนศึกษาการเซ็ตระบบ X-Windows ให้เข้าใจจากคู่มือ
2. ครู ให้นักเรียนลองเซ็ตเครื่อง Server ให้สามารถใช้ X-Windows ได้ โดยกำหนดความละเอียดที่ 600x800 ขึ้นไป และใช้สีที่ 256 สีขึ้นไป
3. คำสั่งที่ให้ใช้คือ “xf86config”
4. ครูให้นักเรียนแต่ละคนลองใช้ค่าอื่น ๆ แล้วจดบันทึกไว้ว่ามีค่าใกล้เคียงใดบ้างที่เซ็ตแล้วสามารถใช้ X-Windows ได้