

Inside Technology Linux Package for Red Hat Linux 7.3 and GX1LCD Boards

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- CPU Board
 1. Type.
 2. Part-number (Number starting with “56”).
 3. Serial Number.
- Configuration
 1. CPU Type, Clock speed.
 2. DRAM Type and Size.
 3. BIOS Revision (Find the Version Info in the BIOS Setup in the Inside Section).
 4. BIOS Settings different than *Default* Settings (Refer to the Software Manual).
- System
 1. O/S Make and Version.
 2. Driver Version numbers (Graphics, Network, and Audio).

Attached Hardware: Harddisks, Floppy, LCD Panels etc.

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1. Introduction

This manual describes how to install Linux Red Hat 7.3 (Kernel: 2.4.18) on a GX1LCD board.

2. Preparations

To install Red Hat 7.3 you will need some ISO image files - valhalla-i386-disc1.iso, valhalla-i386-disc2.iso and valhalla-i386-disc3.iso - which easily can be downloaded from

<http://www.redhat.com/download/rhlinux73.html>

In case of need of a documentation CD-ROM you might download this as well from

<ftp://ftp.redhat.com/pub/redhat/linux/7.3/en/iso/doc/>

Please download the Inside Technology Linux package for the 786LCD boards and the X_4.1.0 binary files from

http://www.inside.dk/websupport/BIOS_and_drivers/GX1LCD/Drivers/Linux/

The package fits on a single floppy disk, so you are advised to copy the package on one of it and move it to target location on your Linux system. The target location is ...

- Inside Technology Linux Package → /usr/src

3. Installation

3.1 Installation of the Red Hat 7.3 distribution

Insert labelled Disk 1 into your CD-ROM and boot from it. When the boot process has finished you will dropped onto a first menu. Here you only need to press <Enter> to install Red Hat in graphical mode. You also might do this in text mode but the graphical mode is recommended. The other options are mainly for maintenance, update or minor configuration purposes .

After pressing <Enter> the Red Hat installation utility will pop up. The utility will guide you step by step through the installation. For more deeply information regarding a single step please refer to the online help window on the left. There you will find what is currently going on and what is the single installation step about.

During the setup you will pass several steps. Please consider the following remarks if there are any for the related step.

- Step 1: **Language Selection** – no remark
- Step 2: **Keyboard Configuration** – no remark
- Step 3: **Mouse Configuration** – no remark
- Step 4: **Install options** – no remark
- Step 5: **Choosing Your Partitioning Strategy** – no remark
- Substep 1: **Partitions** – no remark
- Step 6: **Boot Loader Installation** – Please use LILO as your boot loader.
- Step 7: **Network Configuration** – Be free to enter the necessary values here. The configuration can also be done later.
- Step 8: **Firewall Configuration** – no remark
- Step 9: **Language Support Selection** – no remark
- Step 10: **Time Zone Selection** – no remark
- Step 11: **Account Configuration** – no remark
- Step 12: **Selecting Package Groups** – Please select “Software Development” as well as “Select individual packages” on the bottom of the window.
- Step 13: **Selecting Individual Packages** – Please select “/System Enviroment/Shells/mc”. This will install the “Midnight Commander” a “Norton Commander“ clone that makes working on the shell a lot easier and probably faster too. Maybe it suggests itself for editing tasks. Furthermore you may install “/Development/System/kernel-source” too. The kernel-source is needed to compile a new kernel.
- Step 14: **Video Configuration** – Please skip X configuration this will done later.

Step 15: **About to Install** – no remark

Step 16: **Installing Packages** – no remark

Step 17: **Boot Disk Creation** – no remark

When the installation has finished the SPC will restart automatically. Please remove any CD out of the CD-ROM drive.

4. Configuration

4.1 Configuring X

The main thing now to do is to get X running. Therefore we use the tool named “Xconfigurator” which is installed with Red Hat. To run it you need to type “Xconfigurator” on shell and press <Enter>. When the tool once started you will see two windows one after another. These windows inform you about the detected chipset as well as the connected display respectively. In case the utility isn’t able to detect the display automatically you are going to be asked to choose one display out of a large list. If you are satisfied with the settings you may confirm these with ‘ok’ or ‘yes’.

Subsequently you will be asked how much video memory you want to use. Here you should set up the amount of memory you assigned to the video adapter in the bios (Advanced/Advanced Chipset Control/Video Resolution). Since you won’t find a number but a substitution like “low” or “super” you should know that “super” stands for max. 4 MB of video memory. When you are finished please confirm with ‘ok’.

Afterwards you are asked to configure a clock chip. Since we don’t need one you may confirm the default setting with ‘ok’.

Finally you are dropped into the video modus section. Here you can select all the resolutions and colour depths you possibly like to use later. To make your choice please use the error keys as well as the tab key. To make a selection active you have to press the space key. Please note that a chosen resolution above XGA at 16bit of colour depth isn’t working at the GX1LCD boards. When you think you are finished you can confirm your settings with ‘ok’.

Following to that your settings are going to be tested. For this purpose “Xconfigurator” will start a X session. You will see a test screen that simply consists of a GNOME desktop. If everything goes well you should be able to see a small message box in the middle of your display asking you if you can see this message box. If you are doing so you should confirm with ‘yes’. In a second stage you will see another message box asking you if you wish to boot Linux in a X environment. This means that you aren’t dropped onto the shell any more but in X if the boot process has done its work. If you wish this to happen in the future you may affirm the question otherwise say ‘no’. The last message box you are going to see is about to inform you that some changes to certain configuration files are done. Here you simply need to confirm with ‘ok’. Directly afterwards the configuration of your X environment is finished and you fall back on the shell. Basically it is supposed to happen as just described but possibly and very likely it won’t work. In this case you will fall back to the “Xconfigurator” tool and get an error message instead. Please confirm this message with ‘quit’ because we only need the configuration file written to the disk which has happened even though the test has failed.

4.2 Installation of the Inside Technology Linux package

The package coming along with this document will make modifications to some configuration files, namely to XF86Config-4 and lilo.conf. The package can be installed by running

➤ `sh /usr/src/inside_install.sh`

The script will copy the files to be changed to “/usr/src/inside_package/backups”, applies the necessary modifications to it and updates the boot loader. To make the changes active you should reboot the SBC afterwards. Now you should be able to start KDE or GNOME by running

➤ `startx`

4.3 Network

If you haven't done the configuration of the network adapter during the installation you might subsequently do this with help of Red Hat's "netconfig" – utility. Please execute "netconfig" on the Linux shell and enter the necessary values into the empty fields. Confirm with 'ok'. You probably need to reboot your SBC to make the adapter working by pressing "Ctrl-Alt-Entf" or executing "reboot".

4.4 Sound

Similar to the Network configuration there is a small tool available to change the sound configuration. Please type "sndconfig --noprobe" to run this tool. Now please select "SoundBlaster Pro" and confirm your selection. The next step is to configure the card settings. The default settings are supposed to work fine so you only need to confirm them with 'ok'. In the end of the setup a sample midi or wav file is going to be played. If you don't hear anything then possibly the sound channel is disabled or muted. To enable it you could use KDE's or GNOME's volume control panel.

5. Uninstall the Inside Technology Linux Package

To restore the configuration files in order to undo the modifications the package made please run

➤ `sh /usr/src/inside_package/backups/inside_restore.sh`

Furthermore the boot loader is going to be changed and updated according to the situation before the package was installed. Finally all directories created in association with the installation of the package are deleted.