

LANTRONIX®

MatchPort®



XPort Pro™



EDS1100/2100



VMware Image for Linux Software Developers Kit (SDK) Quick Start Guide

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Disclaimer

The information in this guide may change without notice. The manufacturer assumes no responsibility for any errors that may appear in this guide.

Revision History

Date	Rev.	Comments
6/10	A	Initial document

For supporting product documentation, or the most current version of this document, please visit the Lantronix Web site at www.lantronix.com/support/documentation.

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1. Introduction

This Quick Start Guide explains the basics of installing and using the VMware Appliance pre-installed with the Linux SDK. For more detailed information, refer to the User Guide, located in the Documentation section of the SDK or our Lantronix Web site www.lantronix.com/support/downloads.

Overview

The Lantronix Linux Software Developer's Kit (SDK) is an embedded hardware and software suite that enables Linux developers to create applications for Lantronix DeviceLinux products such as MatchPort AR, XPort Pro, EDS1100 and EDS2100. The Linux SDK has to be installed on Linux Host environment to develop Kernel and applications.

Using the Linux SDK requires Linux to be installed on a Host PC and the host PC environment needs to be setup prior to the installation. The VMware Image for Linux SDK is the Virtual PC Image of the Linux Host environment needed by the SDK. The SDK and all host dependencies are pre-installed to create a ready-to-use setup that can also run on a Windows based PC under VMware.

2. Installing VMware Player

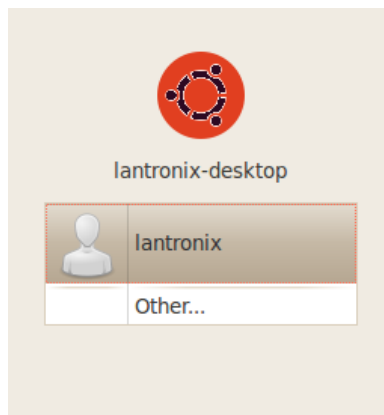
To use the VMware Image you must first prepare Windows or Linux for VMware Player.

To prepare Windows or Linux for running VMware Image:

1. Download the VMware Player executable file from the VMware Web site (<http://vmware.com/download/player/>).
2. Run the VMware Player Installer and follow the on-screen instructions.
3. Unzip the VMware Image for Linux SDK archive into a working directory on the PC and switch to the working directory.
4. Execute the *.vmx file to start the VMware Image.
5. Select **Copied**, if a message prompt appears asking if the *.vmx file has been moved or copied.

The login prompt appears.

Figure 2-1. Lantronix Desktop Login Prompt



The VMware image is ready for use. Refer to the following section [Building Images with the SDK](#) for more information.

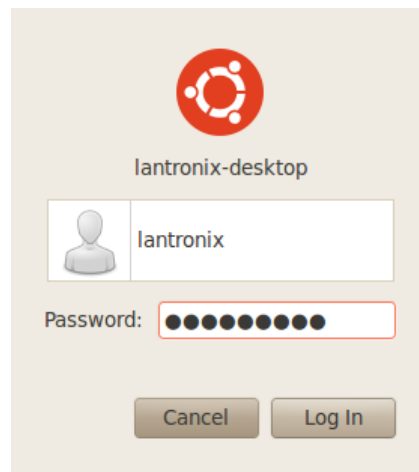
3. Building Images with the SDK

To build a VMware Image with the SDK:

1. From the development host, login using the following credentials:

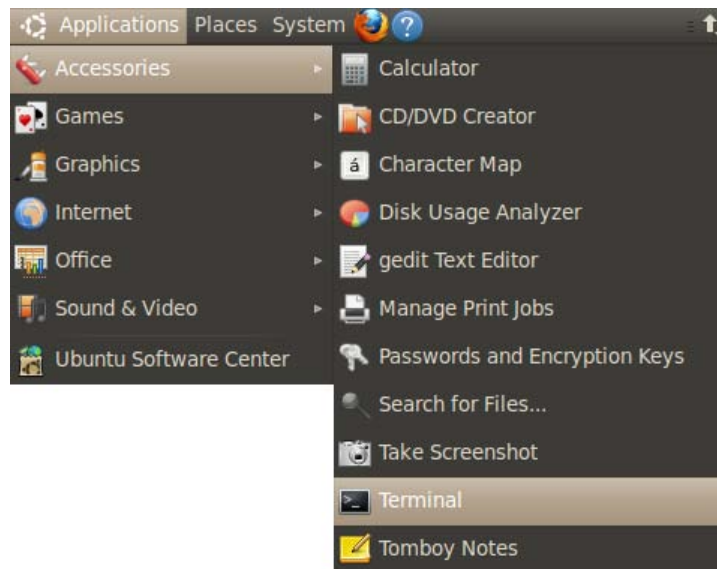
User Name:	lantronix
Default Password:	PASS

Figure 3-1. Lantronix Desktop Login Screen



2. From the **Applications** menu, click **Accessories** and select **Terminal**.

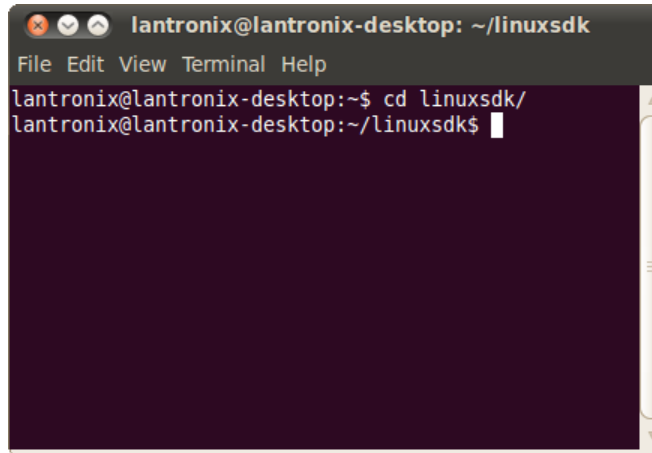
Figure 3-2. Applications Menu



3. Change the directory to linuxsdk.

```
$ cd linuxsdk
```

Figure 3-3. Terminal Window



4. Source the environment file.

```
$ . env_m68k-µClinux
```

5. Issue the make command.

```
$ make
```

6. Select a configuration profile when prompted.

NOTE

If you are unsure of the which configuration profile to use, begin with the DEFAULT profile.

Figure 3-4. Configuration Profile Menu

```
Configuration Profile
> 1. DEFAULT (LTRX_PROFILE_DEFAULT) (NEW)
  2. DEVELOPMENT (LTRX_PROFILE_DEVELOP) (NEW)
  3. NO_IPV6 (LTRX_PROFILE_NO_IPV6) (NEW)
  4. COMPACT (LTRX_PROFILE_COMPACT) (NEW)
  5. AUFS (LTRX_PROFILE_AUFS) (NEW)
  6. SHARED (LTRX_PROFILE_SHARED) (NEW)
choice[1-6?]: 1
*
* Kernel/Library/Defaults Selection
*
*
* Kernel is linux-2.6.x
*
*
* Libc is uClibc
*
*
* glibc Library Configuration
*
```

- Press **Enter** to accept the default options for the remaining prompts.

Figure 3-5. Configuration Prompts

```
Default all settings (lose changes)
(DEFAULTS_OVERRIDE) [N/y] (NEW)
Customize Kernel Settings (DEFAULTS_KERNEL) [N/y]
(NEW)
Customize Application/Library Settings
(DEFAULTS_VENDOR) [N/y] (NEW)
Update Default Vendor Settings
(DEFAULTS_VENDOR_UPDATE) [N/y] (NEW)
...
```

NOTE

The build process may take several minutes to complete.

- Once the build process is complete, verify that the images listed below are under <install directory>/linux/images/.

```
$ ls linux/images/
```

Figure 3-6. Installed Images

```
image.bin imageu.bin imagez.bin linux.bin linuxz.bin
image.without_header linux.without_header romfs.img
rootfs.img romfs-inst.log
```

- Build the root file system for NFS from the installation directory.

```
$ mkdir linux/nfs
$ make
```

- Copy the built images to tftp directory.

```
$ cp linux/images/* /tftpboot/
```


4. Loading Firmware Images

To load the Linux firmware images on the target:

1. From the host computer, open a terminal emulation program for the serial port.
2. Configure the following serial port settings:
 - ◆ baud rate: 115200
 - ◆ data length: 8
 - ◆ parity: None
 - ◆ stop bit: 1
 - ◆ flow control: None
3. Turn the power on to the target board.
4. Use the set command at the dBUG> prompt for the following:

```
dBUG> set watchdog off
dBUG> set base hex
dBUG> set baud 115200
dBUG> set autoboot net
dBUG> set server <TFTP server address(e.g. 192.168.0.10)>
dBUG> set client <target IP address(e.g. 192.168.0.1)>
dBUG> set gateway <gateway address(e.g. 0.0.0.0)>
dBUG> set netmask <network mask(e.g. 255.255.255.0)>
dBUG> set filename image.bin
dBUG> set filetype image
dBUG> set ethaddr default
dBUG> set dns <DNS server address(e.g. 0.0.0.0)>
dBUG> set kcl rootfstype=romfs
```

5. Download image.bin.

```
dBUG> dn
dBUG> go
```

Figure 4-1. μ Clinux Welcome Screen

```

Amd/Fujitsu Extended Query Table at 0x0040
mpt: CFI does not contain boot bank location. Assuming top.
number of CFI chips: 1
cfi_cmdset_0002: Disabling erase-suspend-program due to code brokenness.
Found 0 partitions on the command_line.
Creating 5 MTD partitions on "mpt":
0x000000000000-0x000000020000 : "LTRXbloader"
0x000000020000-0x000000040000 : "LTRXconfig"
0x000000040000-0x000000060000 : "dBus"
0x000000060000-0x000000080000 : "dBusConfig"
0x000000080000-0x000000040000 : "Kernel"
Creating 4 MTD partitions on "mpt":
0x000000400000-0x000000800000 : "UserSpace"
0x000000800000-0x000000800000 : "WritableFlash"
0x000000880000-0x000001000000 : "UserExtra"
0x000000860000-0x000000880000 : "dBusConfBackup"
m520xevb ram probe(0x401b46b0,137000,4): 137000 at 401b46b0
Creating 1 MTD partitions on "RAM":
0x000000000000-0x000000137000 : "Romfs"
m520x_wdt: WDT driver for M520x initialized. timeout=30 sec (nowayout=0)
TCP cubic registered
NET: Registered protocol family 10
IPv6 over IPv4 tunneling driver
NET: Registered protocol family 17
YFS: Mounted root (romfs filesystem) readonly on device 31:9.
Freeing unused kernel memory: 52k freed (0x4019a000 - 0x401a6000)
init started: BusyBox v1.13.3 (2010-06-11 11:06:06 JST)
starting pid 15, tty "": '/etc/init.d/rcS'
Welcome to

      _ _ _ _ _
     / / / / /
    / / / / /
   / / / / /
  / / / / /
 / / / / /
/_/_/_/_/_/
/_/_/_/_/_/
/_/_/_/_/_/
/_/_/_/_/_/
/_/_/_/_/_/

For further information check:
http://www.uclinux.org/

starting pid 37, tty '/dev/ttyS0': '-/bin/sh'
/ # █

```

5. *SDK Forum Information*

The Lantronix Linux SDK forum Web site (<http://forums.lantronix.com>) is the primary resource to obtain updated revisions of the SDK. The SDK and related documentation are also available via the Downloads page (www.lantronix.com/support/downloads). Please visit the Lantronix Web site or the Forums page to determine if a more current version of the SDK is available.

Individual forum topics are monitored by Lantronix engineers and technical support staff and may be used to ask questions regarding any aspect of the SDK. Complete the registration process to obtain a logon ID and post your question. If enabled in your user profile, you will receive an email message when a response to your post is available. Other options for interacting with the forum are described on the forum site itself.