

# **RocketRAID 64x SATA Controller**

## **Ubuntu Linux**

### **Installation Guide**

Version 1.0

Copyright © 2009 HighPoint Technologies, Inc.

All rights reserved.

Last updated on January 4, 2010

## Table of Contents

---

<b>1 Overview .....</b>	<b>1</b>
<b>2 Installing Ubuntu Linux on RR64x controller .....</b>	<b>1</b>
Step 1 Prepare Your Hardware for Installation.....	1
Step 2 Check System BIOS Settings.....	1
Step 3 Prepare the Driver Diskette.....	1
Step 4 Install Ubuntu Server Linux.....	2
<b>3 Installing RR64x driver on an Existing System.....</b>	<b>4</b>
Step 1 Obtain and install the Driver Module.....	4
Step 2 Configure System to Mount Volumes when Startup .....	5
<b>4 Monitoring the Driver .....</b>	<b>5</b>
<b>5 Updating the Driver .....</b>	<b>5</b>
<b>6 Installing RAID Management Software.....</b>	<b>5</b>
<b>7 Rebuilding Driver Module for System Update.....</b>	<b>5</b>

# 1 Overview

The purpose of this document is to provide clear instructions on how to install and use RocketRAID 64x Controller on Ubuntu Linux system.

## 2 Installing Ubuntu Linux on RR64x controller

If you would like to install Ubuntu Linux onto drives attached to RR64x controller, please perform the following operations:

### Step 1 Prepare Your Hardware for Installation

After you attach your hard disks to RR64x controller, you can use RR64x BIOS Setting Utility to configure your hard disks as RAID arrays, or just use them as single disks.

Before installation, you must remove all the disk drives, which are not physically attached to RR64x controller, from your system.

#### Note

---

If you have other SCSI adapters installed, you must make sure the RR64x controller BIOS will be loaded firstly. If not, try to move it to another PCI slot. Otherwise you may be unable to boot up your system.

---

### Step 2 Check System BIOS Settings

In your system BIOS SETUP menu, change **Boot Sequence** in such a way that the system will first boot from floppy or CDROM, and then from SCSI. Refer to your BIOS manual to see how to set boot sequence.

If your BIOS settings do not support such a boot sequence, you can first set it to boot from floppy or CDROM. After you finish installation, set SCSI as the first boot device to boot up the system.

### Step 3 Prepare the Driver Diskette

In the following document, the floppy diskette stands for the floppy diskette which is inserted into the on-board floppy controller, the USB floppy diskette stands for the floppy diskette inserted into the USB floppy controller, the USB diskette stands for USB flash disk and USB harddisk, the USB storage stands for USB diskette and USB floppy controller.

Put the driver files on a (USB) floppy diskette.

Windows:

Create a MS-DOS filesystem and extract the archive file to the (USB) floppy diskette or

USB diskette.

Linux:

```
# mkdosfs /dev/fd0
# mkdir -p /mnt/floppy
# mount /dev/fd0 /mnt/floppy
# tar xzvf rr64x-ubutu-x.tgz -C /mnt/floppy
# umount /dev/fd0
```

---

#### Note

If the floppy diskette is inserted into an USB floppy controller and the device name in the linux system is **sda**, then replace **fd0** in the upper command with **sda:** (e.g.)

```
# mkdosfs /dev/sda
```

If the driver will be put on the first partition of a USB diskette, then replace **fd0** in the upper command with **sda1:** (e.g.)

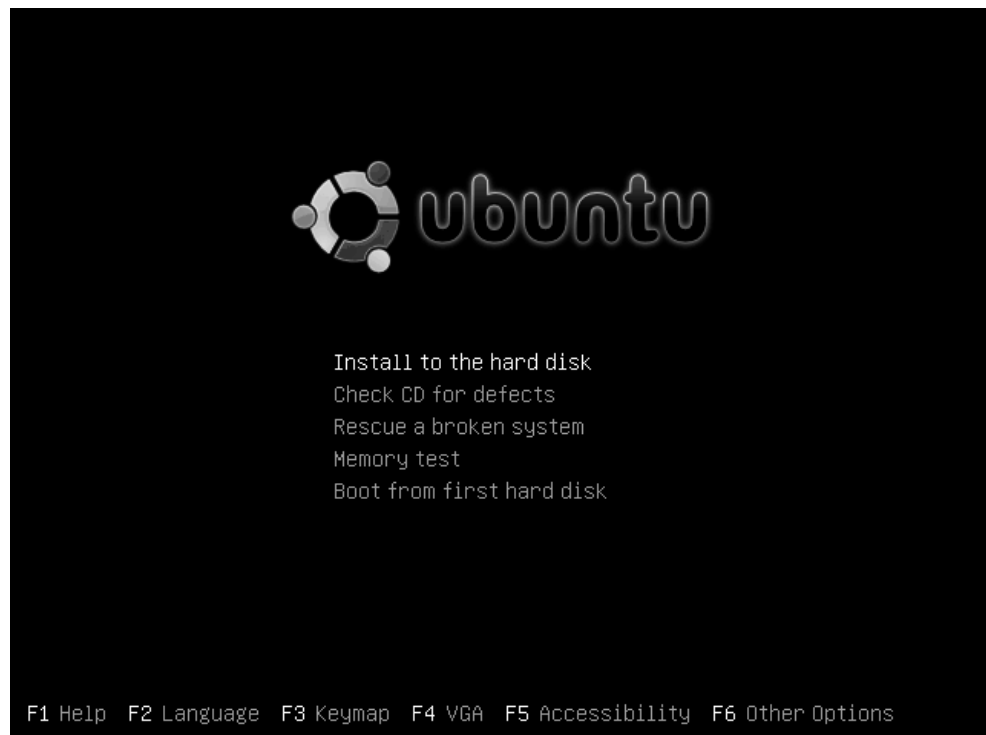
```
# mkdosfs /dev/sda1
```

---

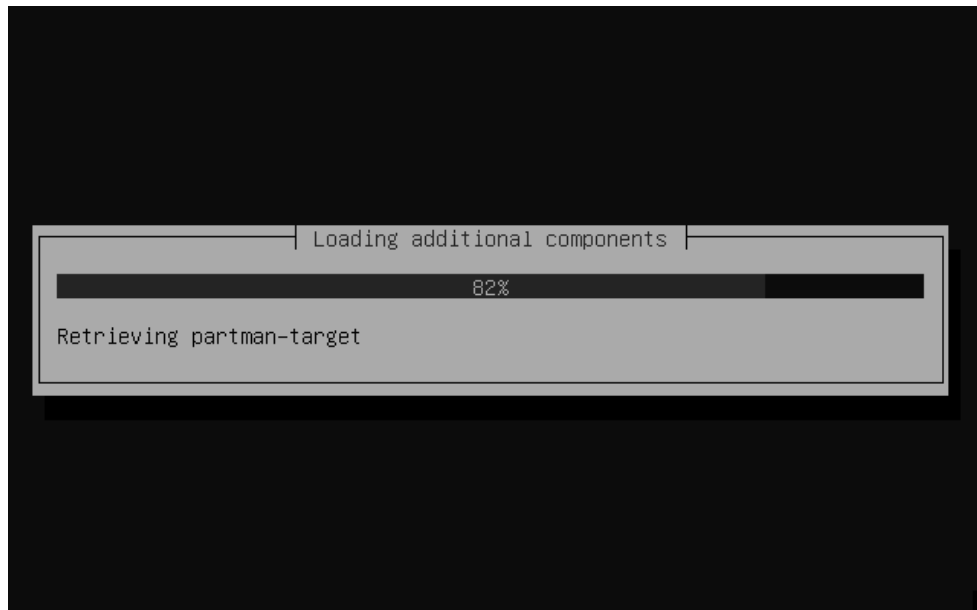
## Step 4 Install Ubuntu Server Linux

Insert the driver floppy diskette in the floppy drive or insert the USB diskette in to the USB port.

- 1) Start installing Ubuntu Linux by booting from the installation CD.
- 2) On the startup screen, for Ubuntu Server 6.10/7.04/7.10, select "**Install to the hard disk**" and for Ubuntu Server 8.04 and later, select "**Install Ubuntu Server**", then press "**Enter**" to continue. Below is the illustration for 6.10/7.04/7.10:



- 3) After the installation completes "**Loading additional components**".



Press "**ALT+F2**" to switch to the shell on console 2. If the installed system is Ubuntu 8.10 and the driver is on a floppy diskette, then you should load the floppy module before mount it:

```
# modprobe floppy
```

Type the following commands to mount floppy diskette:

```
# mount -t vfat /dev/fd0 /floppy
```

```
# cp -r /floppy /tmp/hptdd
```

```
# umount /floppy
```

Unplug all USB storages from the USB port and then type:

```
# sh /tmp/hptdd/preinst.sh
```

```
Please press Enter to activate this console.

BusyBox v1.1.3 (Debian 1:1.1.3-Subuntu12) Built-in shell
Enter 'help' for a list of built-in commands.

~ # mount -t vfat /dev/fd0 /floppy
~ # cp -r /floppy /tmp/hptdd
~ # umount /floppy/
~ # sh /tmp/hptdd/preinst.sh
The disk you insert is for linux kernel 2.6
This step succeeded! Now you can press ALT+F1 to switch
screen!
~ #
```

- 4) Then press "**ALT+F1**" to switch back to installation screen and continue the installation as usual.
- 5) When the screen shows that "[!] **Finish the installation**",



press “**ALT+F2**” to the shell and type the following commands:

```
# sh /tmp/hptdd/postinst.sh
```

A message will be displayed that the driver has been installed successfully.

```
~ # sh /tmp/hptdd/postinst.sh
The disk you insert is for linux kernel 2.6
We have completed the driver installation, you can use
installation console to finish the installation.
~ #
```

- 7) Press “**ALT+F1**” to switch back to installation screen and finish the installation.

## 3 Installing RR64x driver on an Existing System

### Note

If you use a SCSI adapter to boot your system, you must make sure the RR64x controller BIOS will be loaded after that adapter’s BIOS. If not, try to move it to another PCI slot. Otherwise you may be unable to boot up your system.

### Step 1 Obtain and install the Driver Module

Extract the driver archive to a temporary directory and execute the **install.sh** to install the driver to the system. For example:

```
# mkdir /tmp/dd
# tar xzvf rr64x-ubuntu-x-x.tgz -C /tmp/dd
# cd /tmp/dd
```

```
# sh install.sh
```

If the driver of previous version has been in the initrd image, the installer will update the initrd image or it will make the driver automatically loaded while system up.

## Step 2 Configure System to Mount Volumes when Startup

Now you can inform the system to automatically mount the array by modifying the file `/etc/fstab`. E.g. you can add the following line to tell the system to mount `/dev/sda1` to location `/mnt/raid` after startup:

```
/dev/sda1      /mnt/raid      ext3    defaults    0 0
```

## 4 Monitoring the Driver

Once the driver is running, you can monitor it through the Linux proc file system support. There is a special file under `/proc/scsi/rr64x/`.

### Note

---

The file name is the SCSI host number allocated by OS. If you have no other SCSI cards installed, it will be 0. In the following sections, we will use x to represent this number.

---

Using the following command to show driver status:

```
# cat /proc/scsi/rr64x/x
```

This command will show the driver version number, physical device list and logical device list.

## 5 Updating the Driver

Update the driver is the same as installing driver on an Existing System, so refer to section **3 Installing RR64x driver on an Existing System**.

## 6 Installing RAID Management Software

HighPoint RAID Management Software is used to configure and keep track of your hard disks and RAID arrays attached to RR64x controller. Installation of the management software is optional but recommended.

Please refer to HighPoint RAID Management Software documents about more information.

## 7 Rebuilding Driver Module for System Update

When the system updates the kernel packages, the driver module `rr64x.ko` should be built and installed manually before reboot.

To build the driver module, the RR64x open source package and the following building packages are needed: gcc, kernel-headers. The open source package can be got from HighPoint website: <http://www.highpoint-tech.com> while the building tools can be installed from the Ubuntu project website: <http://www.ubuntu.com>

**Note:** the package version of kernel-headers should be the same to the version of updated kernel package.

Refer to the REAME file distributed with HighPoint RR64x open source package on how to build and install the driver module.