Installing DerbyNet on Debian Linux (including Ubuntu or Raspbian)

For Debian-based Linux distributions, including Ubuntu, or Raspbian for Raspberry Pi, DerbyNet is distributed as three "deb" package files, described below. Depending on what you wish to achieve, you may want to install one, two, or all three debs.

derbynet-server	Install this package if you want to host the DerbyNet web server on your Debian/Raspbian system.
derbynet-timer	Install this package if you wish to connect your track timer directly to your Debian/Raspbian system.
derbynet-extras	Install this package for utility scripts to help you e.g. run a kiosk or automated photo stand on your Debian/Raspbian system.

Adding the DerbyNet Apt Repository

Debian-based systems use the "apt" package management system to download and install software. DerbyNet is available in its own repository, but is not part of the standard Raspian repository. The following commands will allow apt to access the repository containing DerbyNet packages:

```
sudo apt-get install -y apt-transport-https

wget -q -O- https://jeffpiazza.org/derbynet/debian/jeffpiazza_derbynet.gpg | \
  sudo apt-key add -

echo "deb [arch=all] https://jeffpiazza.org/derbynet/debian stable main" | \
  sudo tee /etc/apt/sources.list.d/derbynet.list > /dev/null

sudo apt-get update
```

(The commands above also ensure that apt supports https-based repositories, and downloads the key used to sign the DerbyNet repository.)

Note that apt requires an internet connection to download packages from the repository. After installation is complete, you can run the installed software without access to the public internet.

If You Previously Installed derbynet

If you have previously installed the monolithic derbynet package (v2.0 or earlier), apt may refuse to install any of the new debs until the older derbynet package is removed. It may be easiest to do this explicitly, before installing any of the new debs:

```
sudo apt-get remove derbynet
```

All of the functionality previously offered by the old derbynet package is provided through the new packages.

Installing derbynet-server

After adding the DerbyNet repository (see above), install derbynet-server with the following command:

```
sudo apt-get install derbynet-server
```

Derbynet-server has a dependency on nginx to provide the underlying web server. If you already have the Apache web server installed, you may wish to uninstall it to avoid conflicts with nginx:

```
sudo apt-get remove apache2
```

(If Apache is running, it will prevent nginx from starting. If your attempts to browse to the web server result only in "Forbidden" response pages, a conflict with Apache is a possible, even likely, cause.)

derbynet-server and php.ini

The installation script for derbynet-server may (likely will) make changes to the PHP init file, php.ini, found (somewhere) under the /etc/php or /etc/php5 directory. This might be of concern if you host other PHP applications on the same system.

The change is to increase the upload_max_filesize parameter from 2M to 8M. A backup file named php.ini.pre-derbynet will be left in the same directory as any modified php.ini file.

Note that removing the derbynet-server package will *not* undo this change.

Installing derbynet-timer

After adding the DerbyNet repository (see above), install derbynet-timer with the following command:

```
sudo apt-get install derbynet-timer
```

After installing, derby-timer.jar is available as a command on the command line:

```
derby-timer.jar
```

You may need to run with elevated permissions in order to access the serial ports:

```
sudo derby-timer.jar
```

Installing derbynet-extras

After adding the DerbyNet repository (see above), install derbynet-extras with the following command:

```
sudo apt-get install derbynet-extras
```

derbynet-extras has no dependencies, and should install without complaint. Look through /usr/share/derbynet to see what's available.

DerbyNet and Raspberry Pi

About the /boot Partition on Raspberry Pi

The Raspberry Pi boots from an SD or micro-SD card. The card includes includes two partitions: the main partition, and a smaller /boot partition. While the main partition uses one of the Linux-only 'ext' file systems, the /boot partition is a vfat file system. This means the /boot partition can be read and written on the card by Windows, Mac, and Linux systems.

When installed on a Raspberry Pi, the derbynet packages install two small configuration files in the /boot partition. These files are intended to be edited by the user. Placing them in the /boot partition makes it possible to change network parameters, server address, and passwords without having to bring keyboard, mouse, and monitor to attach to the Raspberry Pi. Instead, with the Pi powered off, remove the SD card from the Pi and mount it in a Windows, Mac, or Linux machine, and edit the configuration files directly in the /boot partition; then eject the card, replace it in the Pi and reboot.

About DerbyNet Configuration Files

Several DerbyNet scripts retrieve configuration information from two possible configuration files: `/etc/derbynet.conf` and `/boot/derbynet.conf`. If both files are present, settings in `/boot/derbynet.conf` take precedence over those in `/etc/derbynet.conf`.

Turn-key Kiosk on a Raspberry Pi

If you know in advance what either the DNS name or IP address for the DerbyNet web server will be, you can configure a Raspberry Pi so that it becomes a kiosk as soon as it's plugged in, with no additional intervention required. derbynet-extras includes scripts and configuration files to make this easy. Follow these steps:

1. Copy the autostart file to the local autostart directory:

    ```
    mkdir ~/.config/autostart

    cp /usr/share/derbynet/autostart/kiosk.desktop \
        ~/.config/autostart
    ```

2. *Optional:* Choose your browser. There are several web browsers available for the Raspberry Pi. By default, the script at `/usr/share/derbynet/scripts/kiosk.sh` will select a browser to use based on what browsers are installed. If you prefer to use a different browser, edit a config file (e.g., `/etc/derbynet.conf`). See the comments at the top of the `kiosk.sh` script for further details.

3. Enter the address of your DerbyNet server. Your kiosk browser needs to be pointed to your DerbyNet web server. For true turn-key operation, you must configure your kiosk with the DNS name or IP address of the DerbyNet web server.

    Edit the `/boot/derbynet.conf` configuration file to set the value for the DERBYNET_SERVER variable. (Note that this configuration file is on the boot partition of

the SD card, and can be edited by plugging the SD card into a Mac or Windows laptop.)

4. If you have a screen saver installed, you will probably want to disable it.