# Download Media

1. Open your browser, and navigate to: <https://ubuntu.com/download/server>
2. Click on Download XX.XX.X LTS, XX.XX.X being the latest LTS version on this page.

A screenshot of a computer

Description automatically generated

1. Wait for the download to complete, most browsers will download this to c:\users\username$\Downloads. (username$ being the user you are logged into the system.)

A screenshot of a computer

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# Create Virtual Machine

1. Launch **Oracle VM Virtual Box Manager**.
2. Click **Machine > New…**.

A screenshot of a computer

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1. Click **Expert Mode**.

A screenshot of a computer

Description automatically generated

1. For Name, Type **DerbyNetServer**
2. For Folder, Select the location where you want to store the Virtual Machine Files.

**NOTE:** Recommend putting the virtual machine in its own folder, like the example image shows.

1. For ISO Image, Select the location where you downloaded the ISO File in, Download Media.
2. For Type, Select **Linux**
3. For Version, Select **Ubuntu (64-bit)**.
4. Check, **Skip Unattended Installation**.

A screenshot of a computer

Description automatically generated

1. Expand **Hardware**.
2. For Base Memory, type **4096**.
3. For Processor, select half the number of processors the system has.

A screenshot of a computer

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1. Expand **Hard Disk**
2. For Hard Disk File Location and Size, leave the location as is, set the size to **127.00GB**.
3. Click **Finish**.

A screenshot of a computer

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1. If the virtual machine starts automatically, Right click the machine name.
2. Hover over **Stop >** Click **Power Off**.

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Description automatically generated

1. Right click the machine name **>** Select **Settings**.

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1. Click **Network**.
2. For Attached To, select **Bridge Adaopter**.
3. For Name, select the physical network card for the system.

**NOTE:** Each system will be different because the network adapter will be called something different for each system.

A computer screen shot of a network

Description automatically generated

1. Select **Storage >** Select **Controller: SATA**.
2. Click the Second icon.

A screenshot of a computer

Description automatically generated

1. Click **Create**.

A screenshot of a computer

Description automatically generated

1. Click **Expert Mode**.

A screenshot of a computer

Description automatically generated

1. For Size, Type **80.00GB**.
2. Click **Finish**.

A screenshot of a hard disk

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1. Select **DerbyNetServer\_1.vdi**.
2. Click **Choose**.

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1. Click **OK**.

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1. Right click **DerbyNetServer**.
2. Hover over **Start >** Click **Normal Start**.

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# Installation of Operating System

1. Press **Enter** on Try or Install Ubuntu Server.

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1. On the *Welcome* screen, press **Enter**.

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1. On the *Installer update available*, Press **Enter**.

**NOTE:** If not already selected, you can press Tab to get Update to the new installer highlighted as green. Sometimes this may not come up and you can skip to the next step.

A screenshot of a computer

Description automatically generated

1. On the *Keyboard configuration*, press tab until **Done** is highlighted. Press **Enter**.

A computer screen shot of a keyboard

Description automatically generated

1. On the *Choose type of install*, leave the defaults selected, press tab until **Done** is highlighted. Press **Enter**.

A screenshot of a computer

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1. On the *Network connection*, press Tab until **Done** is highlighted. Press **Enter**.

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Description automatically generated

1. On the *Configure proxy*, press Tab until **Done** is highlighted. Press **Enter**.

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1. On *Configure Ubuntu archive mirror*, wait for the list to populate. Press Tab until **Done** is highlighted. Press **Enter**.

A screenshot of a computer

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1. On *Guided storage configuration*, . Press Tab until **Done** is highlighted. Press **Enter**.

A screenshot of a computer

Description automatically generated

1. On the *Storage configuration*, Press Tab until the selected is on free space 79.998G
2. Press **Enter**.

A screenshot of a computer

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1. Press Tab until **Add GPT Partition** is highlighted.

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1. Press Tab until Mount is highlighted.
2. Press **Enter**.
3. Select **Other**.
4. Type **data**.
5. Press Tab so that **Create** is highlighted green.
6. Press **Enter**.

A screenshot of a computer

Description automatically generated

1. Pressing Tab will highlight all the hard drives make sure **“local disk” 80.000G** has a **partition 1** as shown below and press Tab until **Done** is highlighted green. Press **Enter**.A screenshot of a computer

   Description automatically generated
2. On the Confirm destructive action Press Tab until **Continue** is Red and press **Enter**.

A screenshot of a computer

Description automatically generated

1. On the Profile Setup:
   1. For Your name, type **pack442**.
   2. For Your server name, type **derbynetsrv01**.
   3. For Pick a username, type **pack442**.
   4. For Choose a password, type **pack442**.
   5. For Confirm your password, type **pack442**.
   6. Press Tab so **Done** is highlighted green, press **Enter**.

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1. On the *Upgrade to Ubuntu Pro*, keep Skip for now selected with a X. Press **Enter** to Continue.

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1. Press the **spacebar**, so that Install OpenSSH Server is selected.
2. Press Tab until **Done** is highlighted green, press **Enter**.

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1. On *Featured Server Snaps*, Press Tab until **Done** is highlighted green, press **Enter**.

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Description automatically generated

1. On the *Install Complete!,* wait until the option **Reboot Now**, is showing and then press Tab until it is highlighted as green, then press **Enter**.

A screenshot of a computer program

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**NOTE**: If you receive a Failed unmount /cdrom, just Press Enter on this screen. The system will reboot.

A screenshot of a computer

Description automatically generated

1. Login to the server, with the username you used in [Step 21](#InstallOSStep21) and press **Enter**.

A screenshot of a computer screen

Description automatically generated

1. Type the password with the password you used in [Step 21](#InstallOSStep21) and press **Enter**.

A screenshot of a computer

Description automatically generated

1. Type **sudo apt update** and press **Enter**.

**NOTE:** You may be prompted for the password for pack442, type that password as you used in [Step 21](#InstallOSStep21) and press **Enter**.

A screenshot of a computer

Description automatically generated

1. Type **sudo apt upgrade** and press **Enter**.

**NOTE:** You may be prompted for the password for pack442, type that password as you used in [Step 21](#InstallOSStep21) and press **Enter**.

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Description automatically generated

1. Wait for the upgrade or packages to complete.

A screenshot of a computer

Description automatically generated

1. Press Tab until **OK** is selected and press **Enter**.

A screenshot of a computer

Description automatically generated

1. Type **sudo apt-get install virtualbox-guest-additions-iso** and press **Enter**.

A screenshot of a computer

Description automatically generated

1. You may be prompted for the password for pack442, type that password as you used in [Step 21](#InstallOSStep21) and press **Enter**.

A screenshot of a computer

Description automatically generated

1. Press **Y** and Press **Enter**.

A screenshot of a computer screen

Description automatically generated

1. Press Tab until **OK** is highlighted and press **Enter**.

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Description automatically generated

A screenshot of a computer program

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1. Type sudo init 6 and press Enter.



**NOTE:** This completes the Installation of Operating System, Continue to the next step: [Post Configuration](#_Post_Configuration).

# Post Configuration

Before completing these steps, make sure Putty is installed following [these instructions](#_Installation_of_Putty).

1. Login to the virtual machine via Virtual Box Manager.
2. Look for the IPv4 address for enp0s3.
3. Note this address down.

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1. Launch Putty

A screenshot of a computer

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1. Type the **ip address** you retrieved in [Step 3](#PostConfigurationStep3).
2. Click **Open**.

A screenshot of a computer

Description automatically generated

1. Click **Accept**.

A screenshot of a computer security alert

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1. On the login as type, **pack442** and press **Enter**.

**NOTE:** This would be the username you provided in [Installation of Operating System, Step 21](#InstallOSStep21).

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Description automatically generated

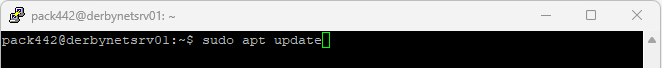
1. On [pack442@XXX.XXX.X.XXX](mailto:pack442@XXX.XXX.X.XXX) password, type **pack442** and press **Enter**.

**NOTE:** This would be the username you provided in [Installation of Operating System, Step 21](#InstallOSStep21).

A screen shot of a computer

Description automatically generated

1. Type **sudo apt update** and press **Enter**.



1. If prompted, type the password for pack442 and press Enter.

**NOTE:** This would be the username you provided in [Installation of Operating System, Step 21](#InstallOSStep21).

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Description automatically generated

A screen shot of a computer program

Description automatically generated

1. Type **sudo apt-get upgrade** and press **Enter**.

A computer screen shot of a program

Description automatically generated

1. Press **Y** and Press **Enter**.

A screenshot of a computer program

Description automatically generated

1. Press Tab until **OK** is highlighted, Press **Enter**.

A screenshot of a computer

Description automatically generated

1. Type **sudo init 6** and press **Enter**.

A screenshot of a computer program

Description automatically generated

1. Continue to [Installation of Derbynet Software](#_Installation_of_Derbynet).

# Installation of Derbynet Software

<https://www.derbynet.org/builds/>

1. Launch **Putty**

A screenshot of a computer

Description automatically generated

1. Type the **ip address** you retrieved in [Step 3](#PostConfigurationStep3).
2. Click **Open**.

A screenshot of a computer

Description automatically generated

1. Click **Accept**.

A screenshot of a computer security alert

Description automatically generated

1. On the login as type, **pack442** and password and press **Enter**.

**NOTE:** This would be the username you provided in [Installation of Operating System, Step 21](#InstallOSStep21).

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Description automatically generated

1. Type **sudo apt-get update** and press **Enter**
2. Type **sudo apt-get install -y apt-transport-https** and press **Enter**

**NOTE:** You will be prompted for the password for pack442, which was set during install.

A screenshot of a computer

Description automatically generated

1. Once completed, continue to the next step.

A computer screen shot of a computer screen

Description automatically generated

1. Copy and past the following into putty and press **Enter**.

*sudo apt-get update*

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

*wget -q -O- https://derbynet.org/debian/derbynet.gpg | \*

*sudo tee /usr/share/keyrings/derbynet-archive-keyring.gpg > /dev/null*

*echo "deb [arch=all signed-by=/usr/share/keyrings/derbynet-archive-keyring.gpg] " \*

*" https://derbynet.org/debian stable main" | \*

*sudo tee /etc/apt/sources.list.d/derbynet.list > /dev/null*

*sudo apt-get update*A computer screen shot of a computer screen

Description automatically generated

A screenshot of a computer screen

Description automatically generated

A computer screen shot of a program

Description automatically generated

1. Type **sudo apt-get install derbynet-server** and press **Enter**.

A computer screen shot of a program

Description automatically generated

1. Press **Y** and then **Enter**.

A screenshot of a computer

Description automatically generated

1. Once completed you will receive a window similar to this:

A screenshot of a computer screen

Description automatically generated

# Post Configuration Derbynet Software

Download the configuration files needed at: <https://github.com/majora15/Pack442PineWoodDerby-main-main/archive/refs/heads/main.zip>

## Extract Configuration Files

1. Navigate to where you download the PineWoodDerbySetup-main.zip file to.
2. Right click > Click **Extract All**.

A screenshot of a computer

Description automatically generated

1. Click **Extract**.

A screenshot of a computer

Description automatically generated

1. Continue to Certificate Update

## Certificate Update

This step required WINSCP to be installed, for Instructions on installing this please go to [Install WinSCP](#_Install_Winscp).

**(See document “Creating SSL Certificate”)**

1. Type **WinSCP** **>** Click **WinSCP**.

A screenshot of a computer

Description automatically generated

1. Type the ip address of the virtual machine.
2. Type the following:

Username: pack442

Password: pack442

1. Click **Login**.

A screenshot of a computer

Description automatically generated

1. Click **Yes / Accept**.

A screenshot of a computer error

Description automatically generated

1. Navigate to the location of the configuration files that you extracted in **Extract Configuration File, Step 3**.
2. Click on etc.

A screenshot of a computer

Description automatically generated

1. Drag the ssl folder over to /home/pack442.

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A screenshot of a computer

Description automatically generated

1. Launch Putty and SSH to the server.

**NOTE:** You may already have this open.

A screen shot of a computer

Description automatically generated

1. Type **sudo** **cp ssl/certs/pack442-coughlinfam-com.pem /etc/ssl/certs/pack442-coughlinfam-com.pem** and press **Enter**.

**NOTE:** You may be prompted for the pack442 password.

A black and white screen with a white text

Description automatically generated with medium confidence

1. Type **sudo cp ssl/private/pack442.coughlinfam.com.key /etc/ssl/private/pack442.coughlinfam.com.key** and press **Enter**.

A computer screen with a black background

Description automatically generated

1. Type **sudo su** and press **Enter**.
2. Type **cd /etc/ssl/private/** and press **Enter**.
3. Type **chown root:ssl-cert pack442.coughlinfam.com.key** and press **Enter**.
4. Type **chmod 640 pack442.coughlinfam.com.key** and press **Enter**.

A black and white screen with white text

Description automatically generated

1. Type: **cd /etc/nginx/sites-available** and press **Enter**.
2. Type: **vi default** and press **Enter**.

A black and white text

Description automatically generated

1. Press INS button on keyboard.
2. Change these lines in red.

*# SSL configuration*

*#include snippets/snakeoil.conf;*

*ssl\_certificate /etc/ssl/certs/pack442-coughlinfam-com.pem;*

*ssl\_certificate\_key /etc/ssl/private/pack442.coughlinfam.com.key;*

A screenshot of a computer program

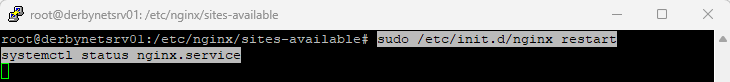
Description automatically generated

1. Press **ESC**
2. Type**:wq!** (including “:”) and press Enter.

A screenshot of a computer program

Description automatically generated

1. Type: **exit** and press **Enter**.
2. Type: **sudo /etc/init.d/nginx restart** and press **Enter**.
3. Type: **systemctl status nginx.service** and press **Enter**.



A screenshot of a computer screen

Description automatically generated

1. Press **q**.
2. Keep the ssh session open and go to [Setup /data for Replay, Car Pictures, and Racers](#_Setup_/data_for).

## Setup /data for Replay, Car Pictures, and Racers

1. Copy and past the following into the putty session and press **Enter**.

*cd /data*

*sudo mkdir derbynet*

*sudo chown www-data:www-data derbynet/*

*sudo chown 777 derbynet/*

*cd derbynet*

*sudo mkdir pack442*

*sudo chmod 777 pack442/*

*sudo chown www-data:www-data pack442/*

*cd pack442/*

*sudo mkdir cars*

*sudo mkdir racers*

*sudo mkdir replays*

*sudo chown www-data:www-data cars/*

*sudo chown www-data:www-data racers/*

*sudo chown www-data:www-data replays/*

*sudo chmod 777 cars*

*sudo chmod 777 replays/*

*sudo chmod 777 racers/*

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1. Continue to [Custom Kiosk Pages](#_Custom_Kiosk_Pages).

## Custom Kiosk Pages

1. Type **WinSCP** **>** Click **WinSCP**.

A screenshot of a computer

Description automatically generated

1. Type the ip address of the virtual machine.
2. Type the following:

Username: pack442

Password: pack442

1. Click **Login**.

A screenshot of a computer

Description automatically generated

1. Click **Yes / Accept**.

A screenshot of a computer error

Description automatically generated

1. Navigate to the location of the configuration files that you extracted in **Extract Configuration File, Step 3**.
2. Click on **var** > click on **www** >click on **html >** click on **derbynet**.

A screenshot of a computer

Description automatically generated

1. Drag the ssl folder over to /home/pack442.

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

1. Type: **sudo cp kiosks/pack442-\* /var/www/html/derbynet/kiosks/** and press **Enter**.



1. Type: **sudo cp local/config-url /var/www/html/derbynet/local/** and press **Enter**.



1. Type exit and press Enter.

A black and white screen with white text

Description automatically generated

1. Post Configuration of the software is done.

# Appendix:

## Installation of Putty

1. Navigate to: <https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>
2. Download the version that best fits your machine (most modern machines will select 64-bit x86).

A screenshot of a computer

Description automatically generated

1. Click on the download, to install.

A screenshot of a computer

Description automatically generated

1. Click **Next**.

A screenshot of a computer

Description automatically generated

1. Click **Next**.

A screenshot of a computer

Description automatically generated

1. Click **Install**

A screenshot of a computer

Description automatically generated

1. Click **Yes** if you receive this message box.

A screenshot of a computer error

Description automatically generated

1. Click **Finish**.

A screenshot of a computer program

Description automatically generated

1. Installation of putty is complete; continue to the step you were on.

## Install Winscp

1. Navigate your browser to: <https://winscp.net/eng/download.php>.
2. Click **Download**.

A screenshot of a computer

Description automatically generated

1. Click on the download, to install.

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Description automatically generated

1. Click **Install for all users (recommended**).

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1. Click Yes if you receive this message.

A screenshot of a computer error

Description automatically generated

1. Click **Accept**.

A screenshot of a computer screen

Description automatically generated

1. Click **Next**.

A screenshot of a computer program

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1. Click **Next**.

A screenshot of a computer

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1. Click **Install.**

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Description automatically generated

1. Uncheck the two boxes and click **Finish**.

A screenshot of a computer

Description automatically generated

1. Installation of Winscp is complete, continue to the step you were on.