



# Kolibri Install on Raspbian for PC

Created October 2018

Last Reviewed February 2020

version 7

How to install Raspbian and Kolibri onto an older PC/Laptop

Thanks to James and others for all their help.

If you find any errors or difficult to understand bits please let me know so I can change things.

**Note: Kolibri Starter** is a separate document and is a better guide for using Kolibri

It is downloadable from [giakonda.org.uk/technical](http://giakonda.org.uk/technical)

This and other documents like it can be downloaded from [giakonda.org.uk/technical](http://giakonda.org.uk/technical).

Contact [info@giakonda.org.uk](mailto:info@giakonda.org.uk) for information

Contact [support@giakonda.org.uk](mailto:support@giakonda.org.uk) for support

[www.giakonda.org.uk](http://www.giakonda.org.uk)

[info@giakonda.org.uk](mailto:info@giakonda.org.uk)

# Installing Kolibri on Raspbian for x86/amd

Version 6.6

If you spot any errors or want help please contact [howard@giakonda.org.uk](mailto:howard@giakonda.org.uk)

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# Equipment required to run Kolibri

## Hardware requirements

Below you will find general recommendations regarding hardware requirements to run Kolibri. To read more detailed information and find out examples of hardware setups that have been implemented by users, download the full Kolibri Hardware Guide found here

<https://drive.google.com/file/d/0B9ZzDms8cSNgVWRKdUIPc2lkTkk/view> (Jan 2018) and examples of Hardware Configurations for Kolibri (PDF documents).

## Servers (The main computer holding content)

Minimum hardware requirements to run Kolibri as a server:

- 500 MB RAM (1 GB recommended)

- 500 MHz CPU (1 GHz recommended)

Hard drive space depends on the size of the content channels you intend to import from Kolibri Studio or a local storage device.

If you have a facility with less than 25 computers, a device as simple as a Raspberry Pi is known to work fine as a server.

## Clients (The computers used by students)

Very old desktop computers and very low-power computers can be used as client devices to access Kolibri. For instance, some implementations are known to use the original Raspberry Pi as desktop computers.

It is always a good idea to do a practical test, but when you want to implement Kolibri, usually it's not necessary to scale your hardware. The main requirement is that your system needs a video card and can play the videos.

# Installing Linux

For those using Linux for the first time here are a few pointers to getting up and running.

Firstly why use Linux, well it is a lot more secure than Apple or Microsoft operating systems. I have never had a virus on any of my Linux computers. Secondly you can install Linux on many older computers that might otherwise be considered obsolete. Finally, for the moment, the software is mostly open source, this makes it inherently more secure and best of all freely available. I write all my documents with LibreOffice Writer, far nicer to use than the Microsoft or Apple equivalents.

I have chosen to use a version of Linux developed by Cambridge University for the Raspberry Pi, called Raspbian. It can be downloaded for free from

<https://www.raspberrypi.org/downloads/raspberry-pi-desktop/>

Choose to download the ISO, this is an image of the software that has to be burnt (transferred) first to a usb storage device then from there to the hard-drive of your target computer using software called Etcher. Etcher can be downloaded for free from <https://www.balena.io/etcher/cli>

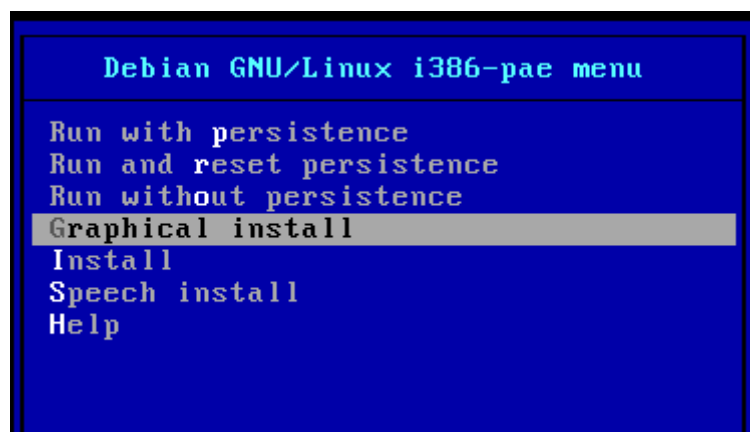
It is very straightforward to use.

I suggest you install Linux on a computer on its own, Do not try to install it along side Windows or Mac. Although it is possible to do this I have found the second operating system often causes more trouble than it's worth.

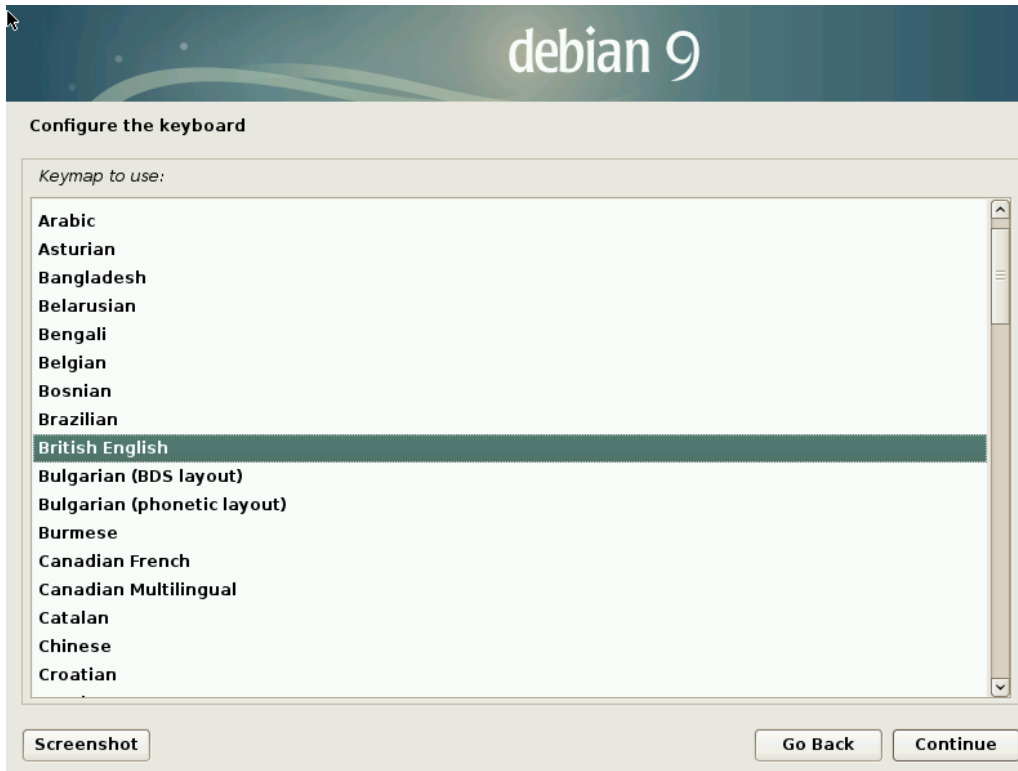
Use Etcher to burn the ISO image onto a USB storage device. There must be enough space on this USB so make sure it's big enough. I use 16GB USB devices which is a lot more than you really need.

Insert the USB into your computer and start it up. You may need to press the F12 key in order to select the option to boot from USB device.

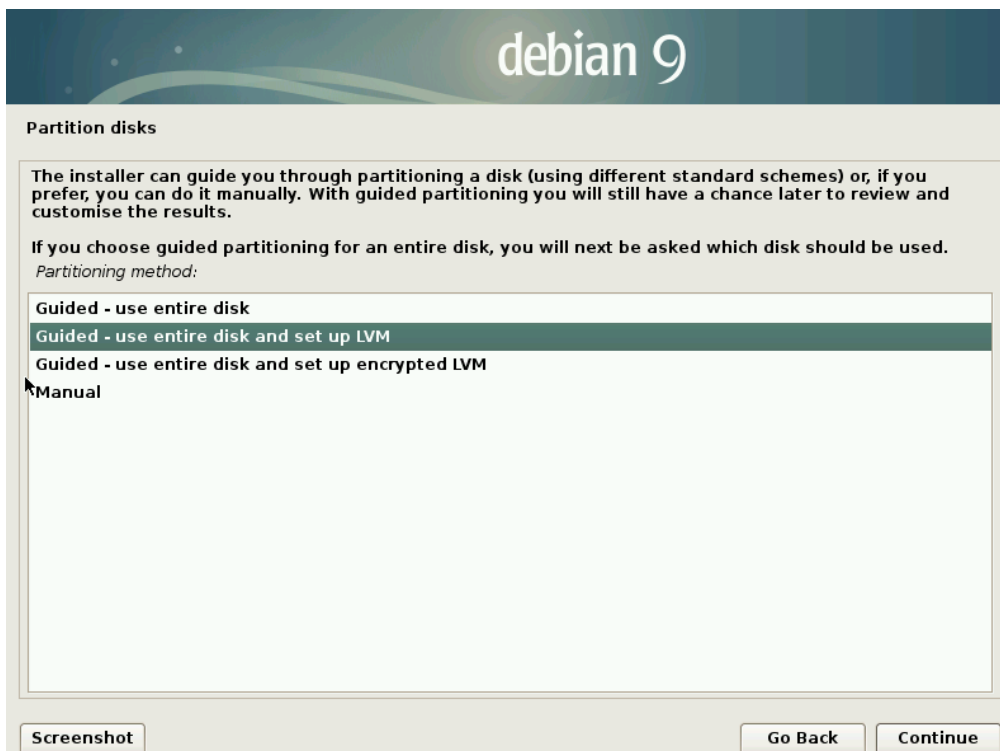
Once started your first choice is to choose what to do. For us it is easiest to select **Graphical install**



Next select the language you will use, for me it's English, I don't speak Welsh lol.



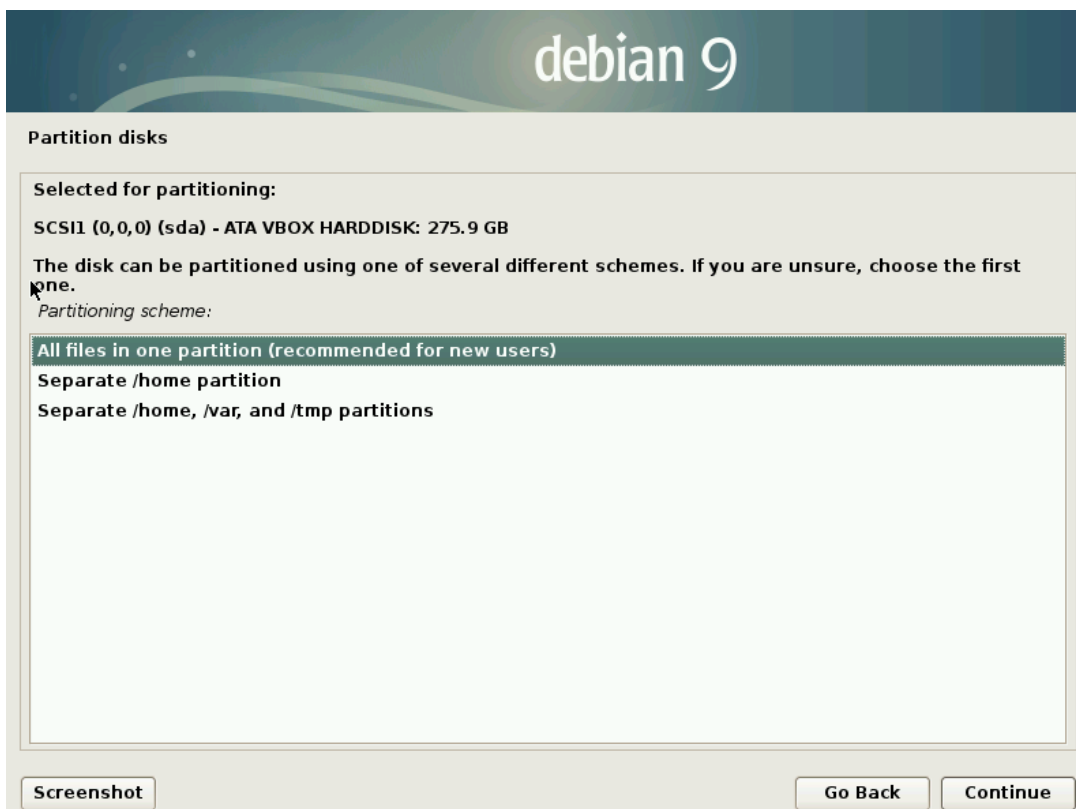
Again because it's the easiest choice select the LVM as shown below. If your work is super secret setup the encrypted LVM. If you do this KEEP THE PASSWORD SAFE. Without it ALL your data will be lost!



Now choose the disk you are going to install Linux on. Do not install it onto your USB device!

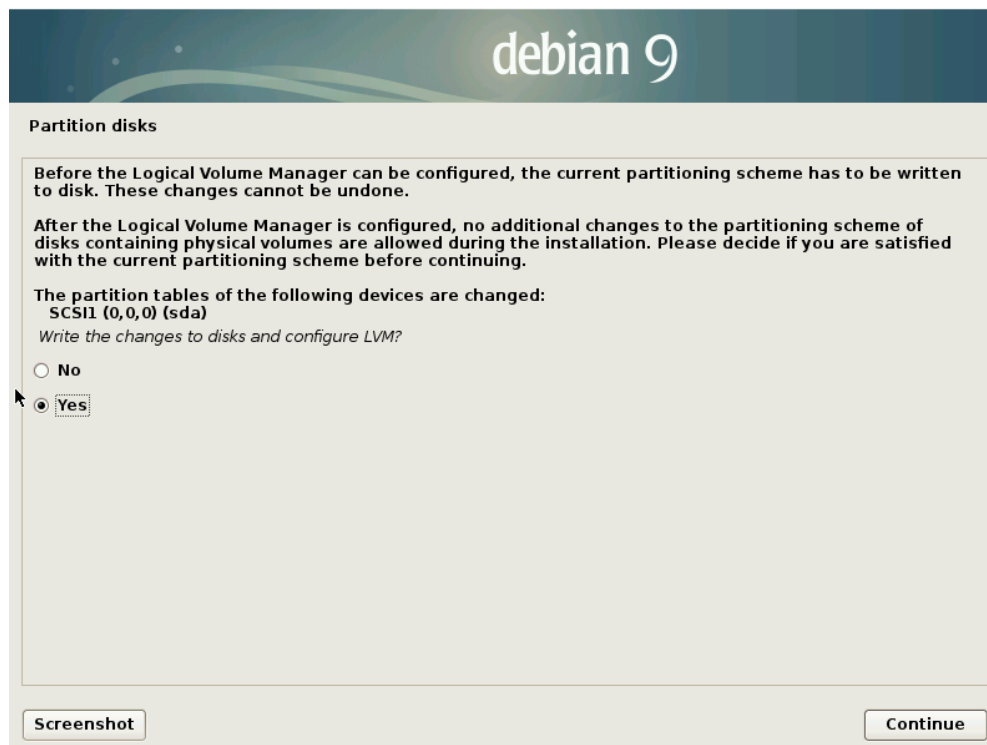


You can do a lot more with Linux than you can with operating systems like Windows but for us we just keep it simple

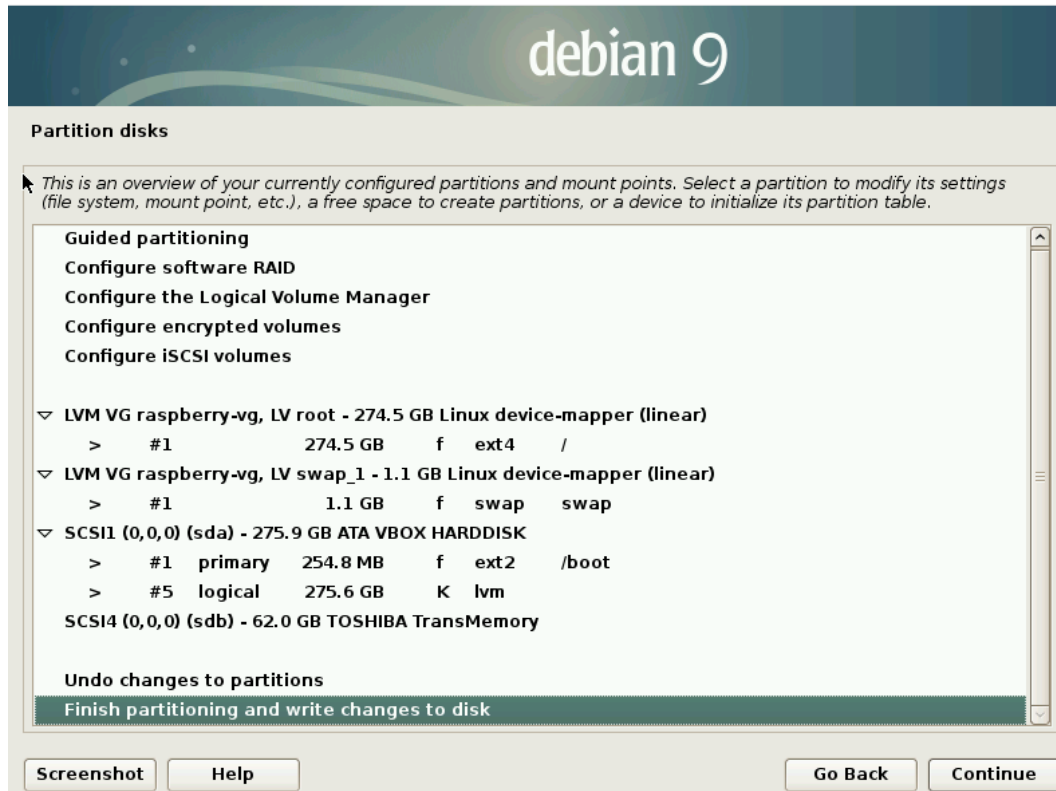


At this point you must write the changes made by the install process to your hard-drive.

This is the point where any of the old stuff on your disk will be lost



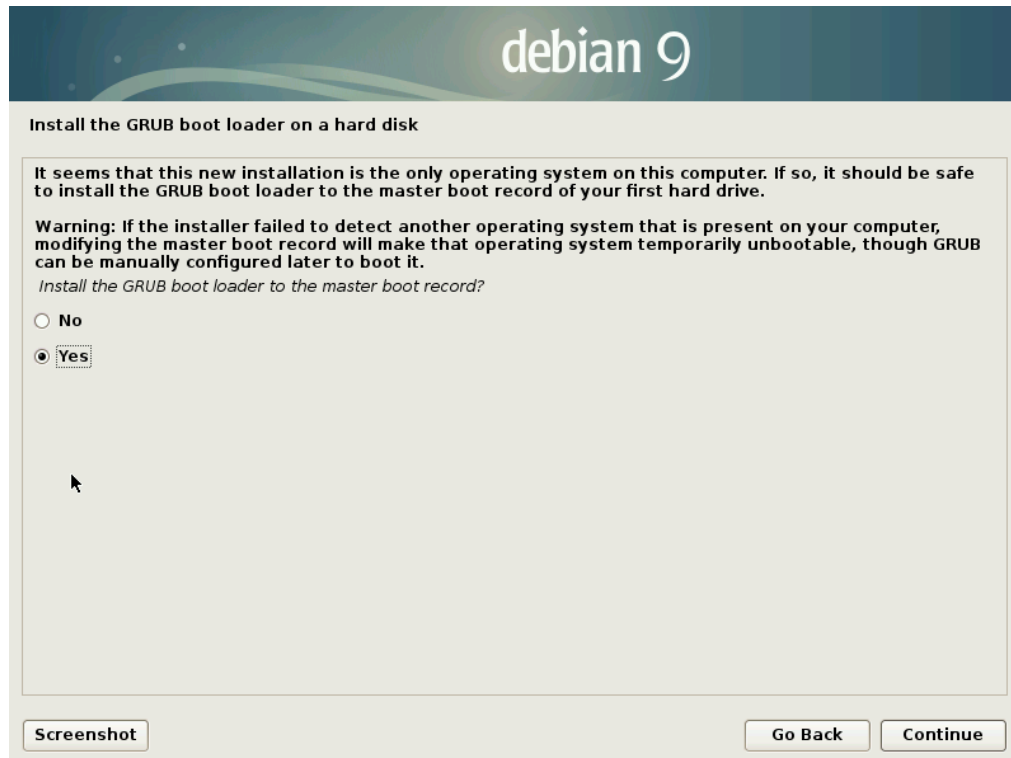
Click **Continue** to write the information to your disk





This next bit is a little techie

GRUB (short for GNU GRand Unified Bootloader) is the thing that starts your computer. Its a play on words from Physics (Grand Unified Theory). It makes sense if you watch the Big Bang Theory



Be careful not to choose the USB device. Your hard drive is usually labelled something like /dev/sda

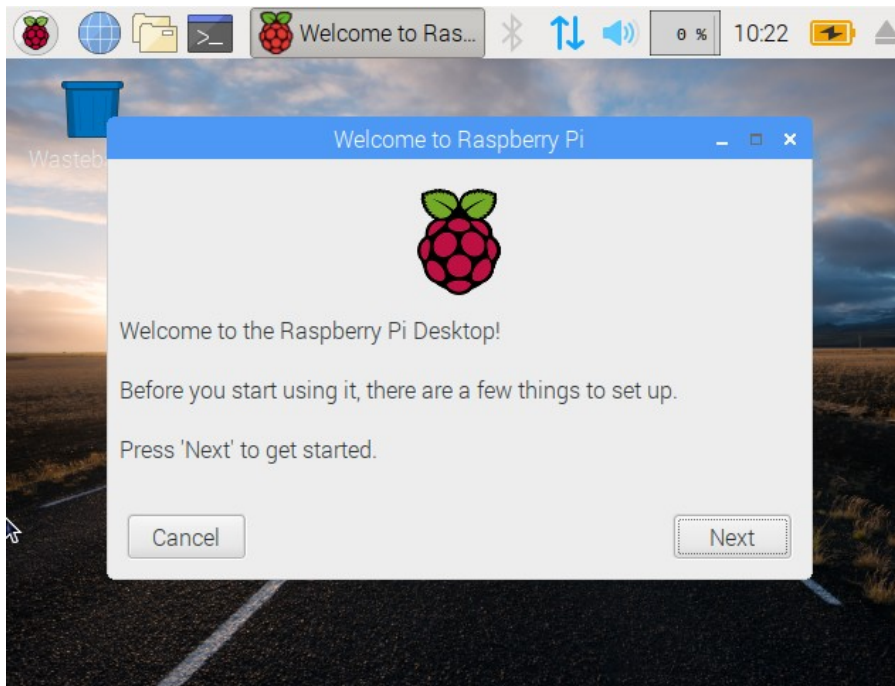


Once the installation is complete remember to remove the USB stick and click Continue to restart your computer.

**Note:** This USB stick can be used to install Kolbri on any number of computers so share it around



Once the computer restarts you will see the usual screen of the Raspberry Pi

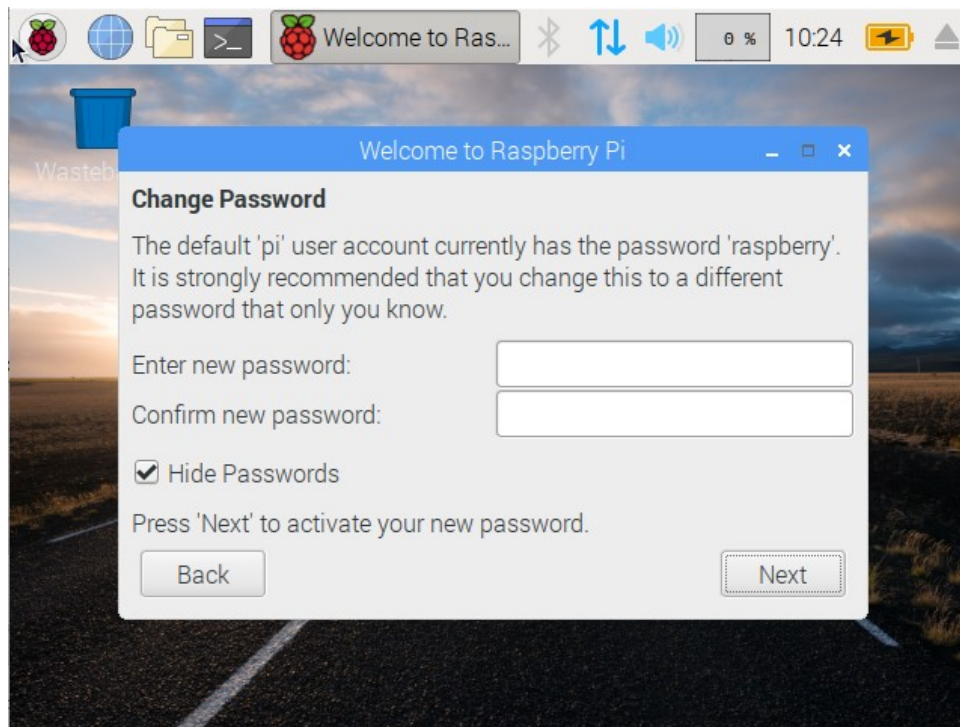


Now choose your language, (Chitonga is not available yet).

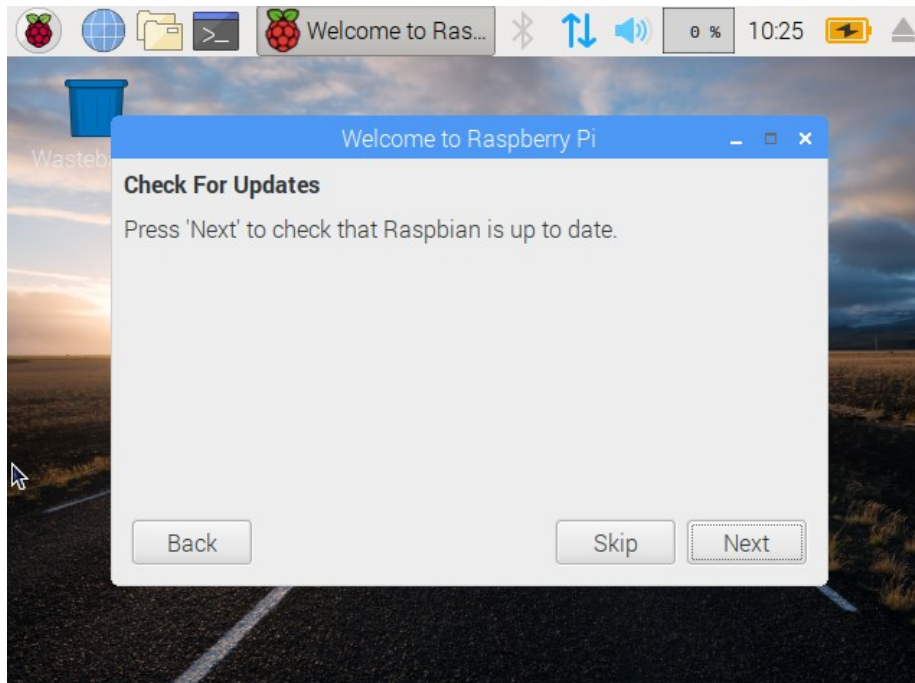


You now have the option to set a password. If you want to keep your stuff safe choose a good password, one with letters numbers and symbols and at least 8 letters eg Z4mb14!!

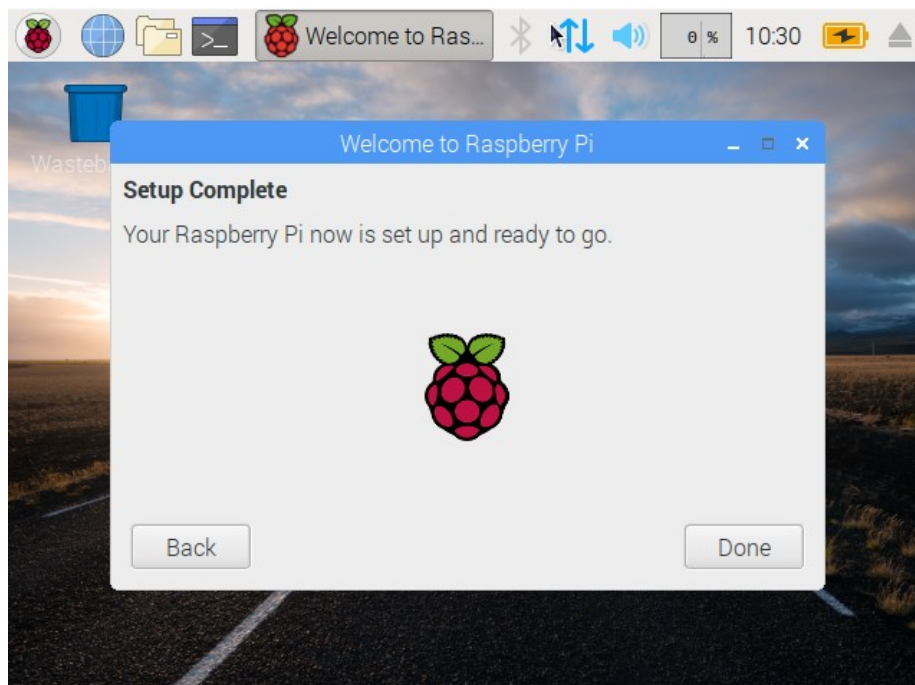
Keep your password safe and don't give it to anyone!



In order to update you must be connected to the internet. If you're not then you can click skip to avoid this part. If you are connected to the internet then click next and your computer will be checked to see if you are up-to-date and if you're not it will update the files automatically.

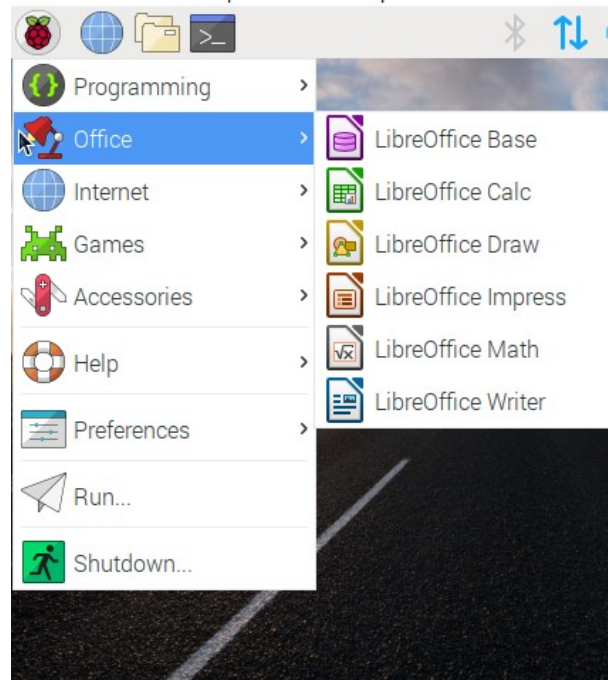
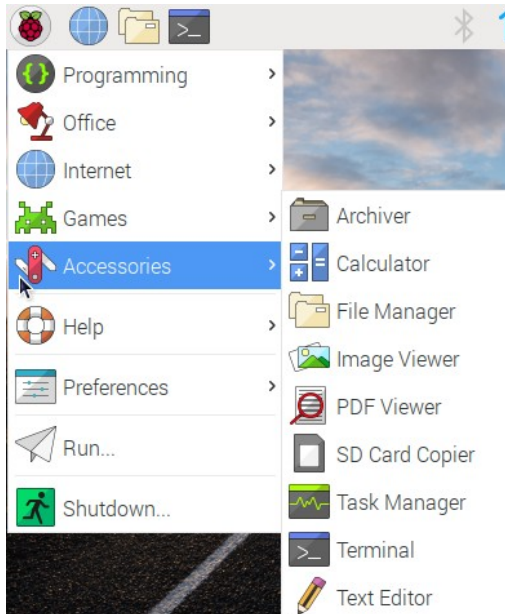


Once any updating is done you are ready to go.





There's a lot to explore! So don't be afraid to try things.



# Adding the Kolibri app to your machine

**Note:** To continue make sure you are connected to the internet

Kolibri systemfiles are saved on a server identified as Kolibri Studio. They can be downloaded to your computer and installed with a single command line.

We are going to use pip. **pip** is a package management system used to install and manage software packages written in the Python language.

**Note:** The original pip, peripheral interchange program, was used on Dec pdp computers and the CPM operating system in the 60s. Just saying

Open a terminal and type

**sudo pip install kolibri**

That's it for the install! The pip command will find the repository for kolibri, download the files and install them.

**Note:** should you want to uninstall kolibri open a terminal window and type  
`sudo pip uninstall kolibri`

**Note:** I have seen a better but more techie alternative install which adds the command add-apt-repositories etc, which does not exist on some implementations. This method also means Kolibri will be automatically updated.

`sudo apt-get install software-properties-common`

**Note:** on early versions of Raspbian you will need to additionally install dirmngr using  
`sudo apt-get install dirmngr`

```
sudo su -c 'echo "deb http://ppa.launchpad.net/learningequality/kolibri/ubuntu cosmic main" > /etc/
apt/sources.list.d/learningequality-ubuntu-kolibri-cosmic.list'
sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv-keys
DC5BAA93F9E4AE4F0411F97C74F88ADB3194DD81
sudo apt-get update
sudo apt-get install kolibri
```

**Note:** Each line that starts with sudo is a command and must be typed completely with NO enter key presses! Until directly before line next sudo. That means ignore the new lines just keep typing!

**Note:** If you use the techie version you won't have to type Kolibri Start each time you run Kolibri

Once installed, and because we are running Kolibri for the first time, we will need to start the Kolibri setup process by opening a terminal window and typing

### **kolibri start**

Depending on how you have installed Kolibri you may have to start Kolibri each time you start the computer from cold. To do this simply open a terminal window and type

### **kolibri start**

A lot of technical information will be displayed which you can ignore.

At the end of the install there is a lot of technical information. Look for the 2 lines that show your ip address the first will be 127.0.0.1

<http://127.0.0.1:8080>

<http://192.168.1.103:8080>

<b>Note:</b> The second line will not be the same as typed here!
--

Make a note of these numbers. You will need them to access kolibri. The first number is a default local ip address for a computer. The second address is the network assigned ip address. The second ip address is what you will use if you want to run Kolibri sitting at a different computer on the same network.



If you are using the same PC for setup and install open a browser and type **127.0.0.1:8080** (the :8080 is referred to as the port number. It's important in order to run Kolibri)  
If you are accessing Kolibri from a different PC or other device type the second line  
**http://<ip address shown on second line>:8080**  
into your browser.

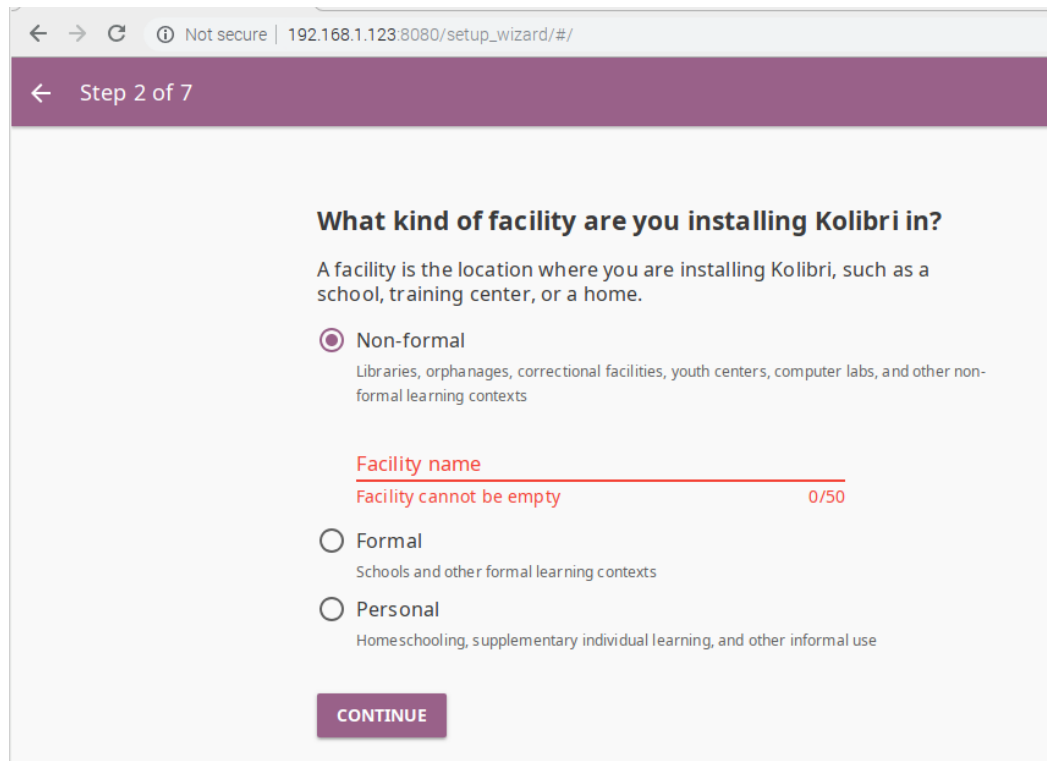
**Note:** if you are using a pre-installed version of Kolibri (from world possible) on the Raspberry Pi the port number would be  
**http://<ip address shown on second line>:9090**  
You will need to fill in the required information as you progress through the setup.

**Note:**  
Administration Details that I set up are Username admin and [P@ssw0rd!](#)  
  
To create a New Super Admin  
In case you need to create another super admin user, either to address additional needs of managing your facility, or if you lost the password for the old one, open a terminal and run the following command.  
  
**kolibri manage createsuperuser**  
  
You will be prompted to input the Username and Password and the new super admin user account will be created.

# Setting up Kolibri for the first time

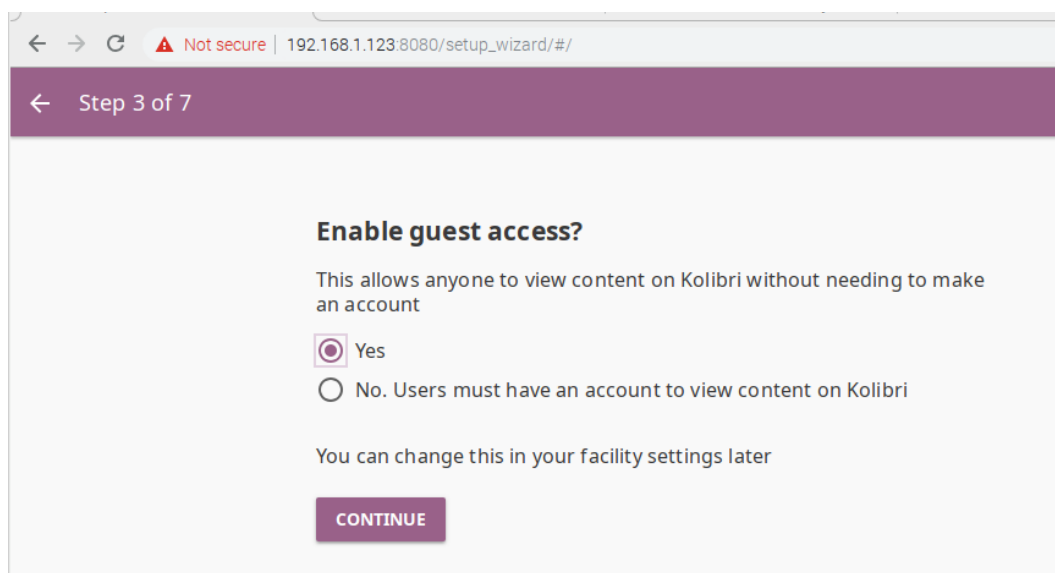
Entering your organisations details (Second window of setup process)

These notes are for a basic setup. A more formal setup will follow.



The screenshot shows a web browser window with the address bar displaying "192.168.1.123:8080/setup\_wizard/#/". The page title is "Step 2 of 7". The main heading is "What kind of facility are you installing Kolibri in?". Below this, a description states: "A facility is the location where you are installing Kolibri, such as a school, training center, or a home." There are three radio button options: "Non-formal" (selected), "Formal", and "Personal". The "Non-formal" option is described as "Libraries, orphanages, correctional facilities, youth centers, computer labs, and other non-formal learning contexts". The "Formal" option is described as "Schools and other formal learning contexts". The "Personal" option is described as "Homeschooling, supplementary individual learning, and other informal use". A red error message "Facility name Facility cannot be empty 0/50" is displayed above the "Formal" option. A purple "CONTINUE" button is at the bottom.

Once you have entered the location details you will be asked if you want users to log into the system without being registered. This is ok but guest users will not be able to track their progress. Generally I would recommend pupils having an individual account set up by a teacher/administrator



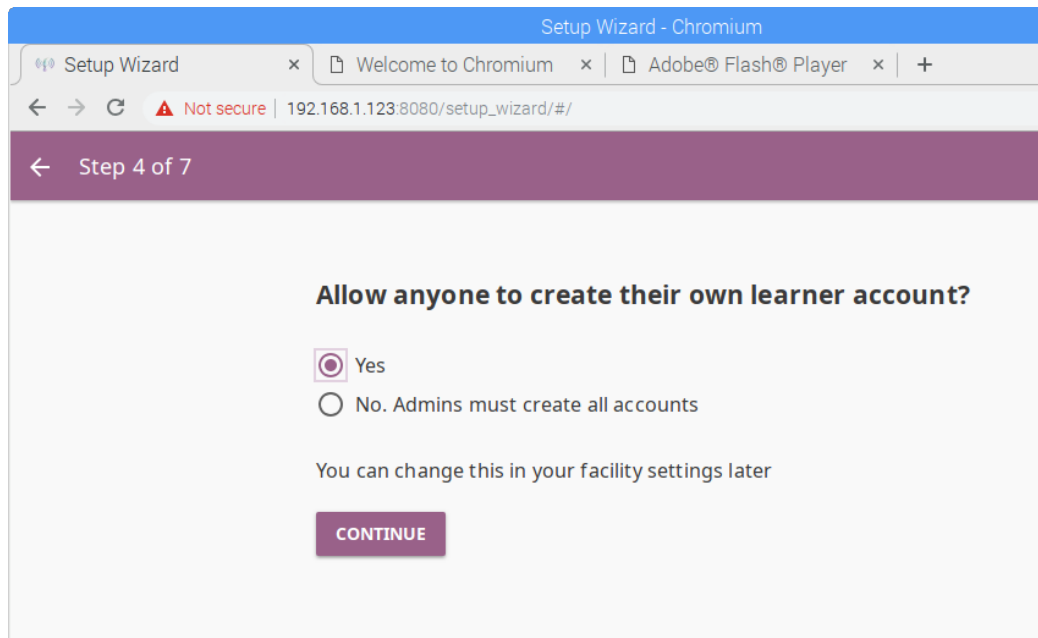
The screenshot shows a web browser window with the address bar displaying "192.168.1.123:8080/setup\_wizard/#/". The page title is "Step 3 of 7". The main heading is "Enable guest access?". Below this, a description states: "This allows anyone to view content on Kolibri without needing to make an account". There are two radio button options: "Yes" (selected) and "No. Users must have an account to view content on Kolibri". A note below the options states: "You can change this in your facility settings later". A purple "CONTINUE" button is at the bottom.

## Learner account setup

The choice you have here is for you to monitor and control learner accounts or for the learners themselves to do this.

You monitoring is a lot of work for you

Users monitoring themselves is a big responsibility for them.



Setup Wizard - Chromium

Setup Wizard x Welcome to Chromium x Adobe® Flash® Player x +

← → ↻ ⚠ Not secure | 192.168.1.123:8080/setup\_wizard/#/

← Step 4 of 7

**Allow anyone to create their own learner account?**

☒ Yes

☐ No. Admins must create all accounts

You can change this in your facility settings later

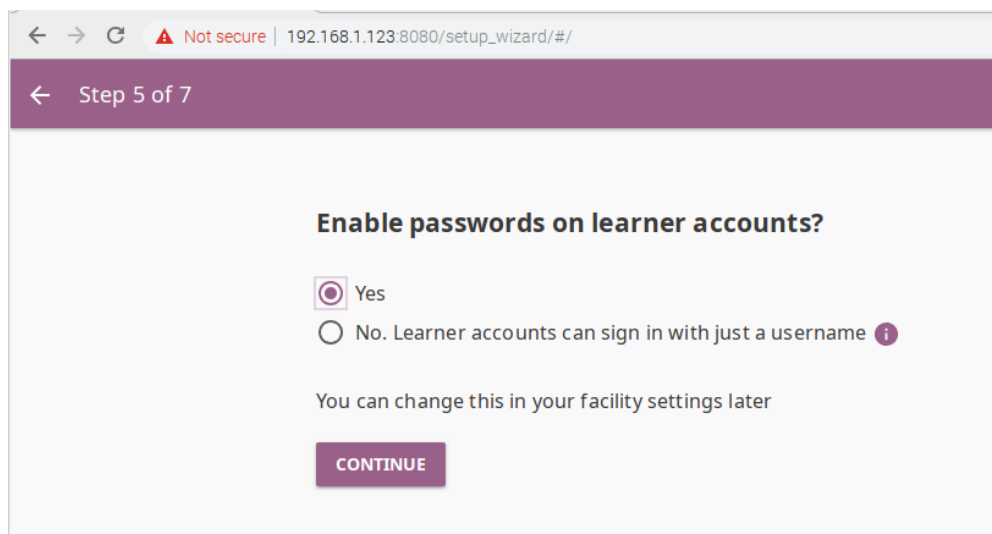
CONTINUE

Enabling learner account passwords is the next screen.

Learner passwords are another big issue

Learners Forget and you will have to manage that!

Without passwords anyone can get into anyone's account



← → ↻ ⚠ Not secure | 192.168.1.123:8080/setup\_wizard/#/

← Step 5 of 7

**Enable passwords on learner accounts?**

☒ Yes

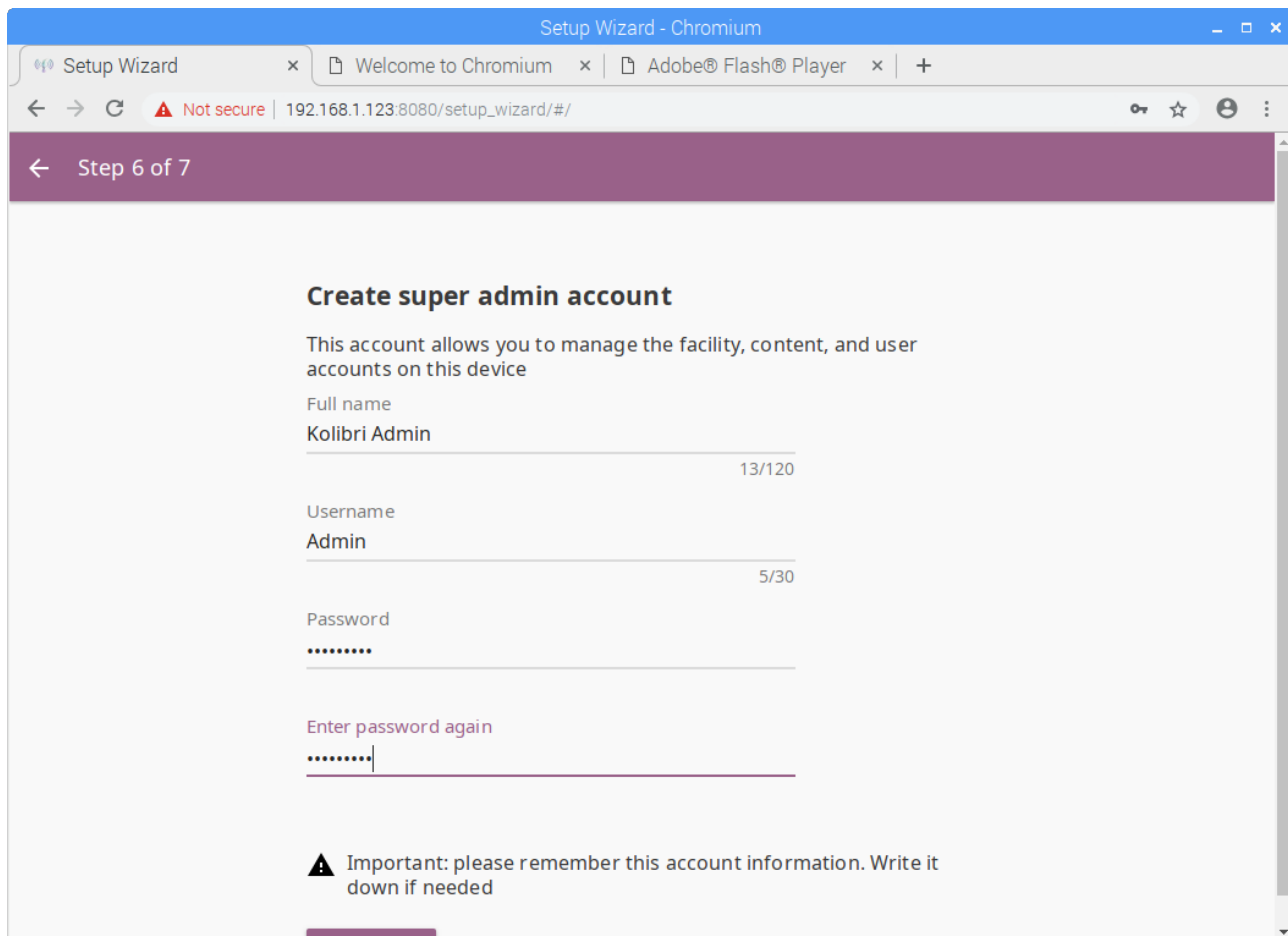
☐ No. Learner accounts can sign in with just a username ⓘ

You can change this in your facility settings later

CONTINUE

## Administrator details.

Needless to say this information is sensitive. Never give anyone the administrative password without giving it a lot of thought, and then it's probably still not a good idea.



The screenshot shows a web browser window titled "Setup Wizard - Chromium". The address bar shows the URL "192.168.1.123:8080/setup\_wizard/#/" with a "Not secure" warning. The page is titled "Step 6 of 7" and "Create super admin account". It explains that this account allows management of the facility, content, and user accounts. The form includes fields for "Full name" (Kolibri Admin, 13/120), "Username" (Admin, 5/30), "Password" (masked with dots), and "Enter password again" (masked with dots). A warning icon and text state: "Important: please remember this account information. Write it down if needed".

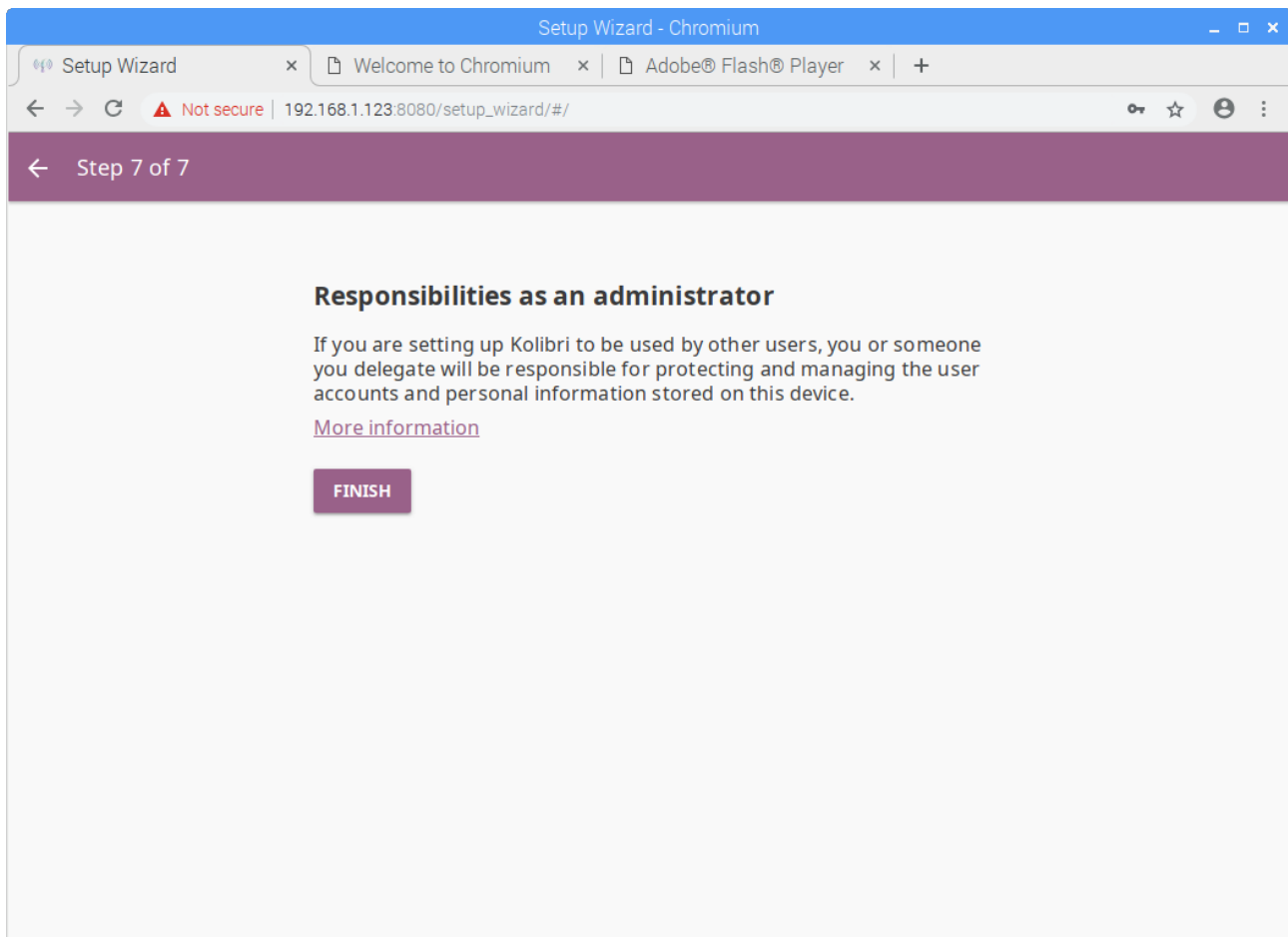
Hopefully if you have these notes you are a responsible adult and won't let the kids get their hands on them!

Administrator details and password ([P@ssw0rd!](#))

If your browser asks to save your password say No. If you don't other people will find it easy to get into your account, lock you out and create havoc!

# Administrator Responsibilities

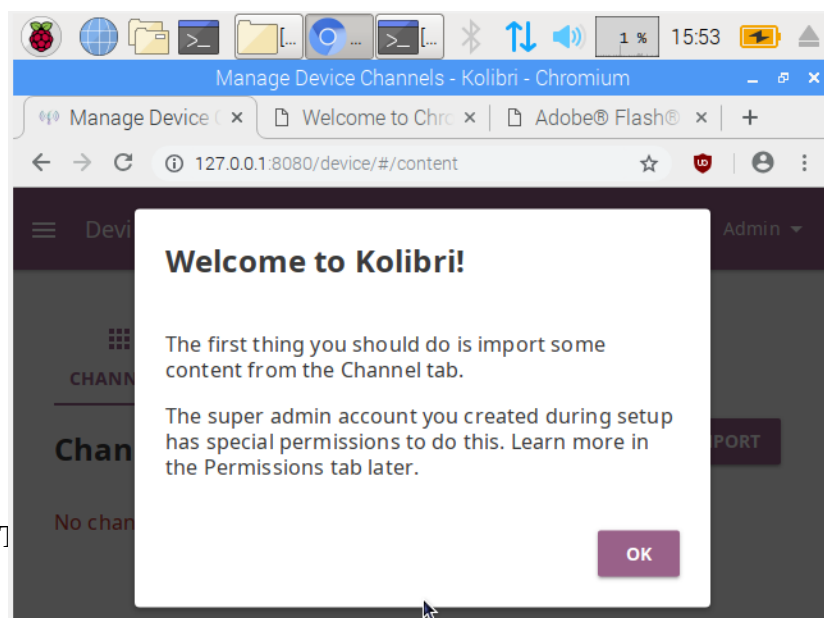
The most important thing to remember is that you hold the key to your pupils records. You lose that key and your pupils progress with Khan Academy is lost.



You have now finished the setup to Kolibri.

The next task you have is to now download content to your site.

There is a great deal of material available for you to download, much more than you can add to your computer so you have to make choices.



G:\Resources\7.odt

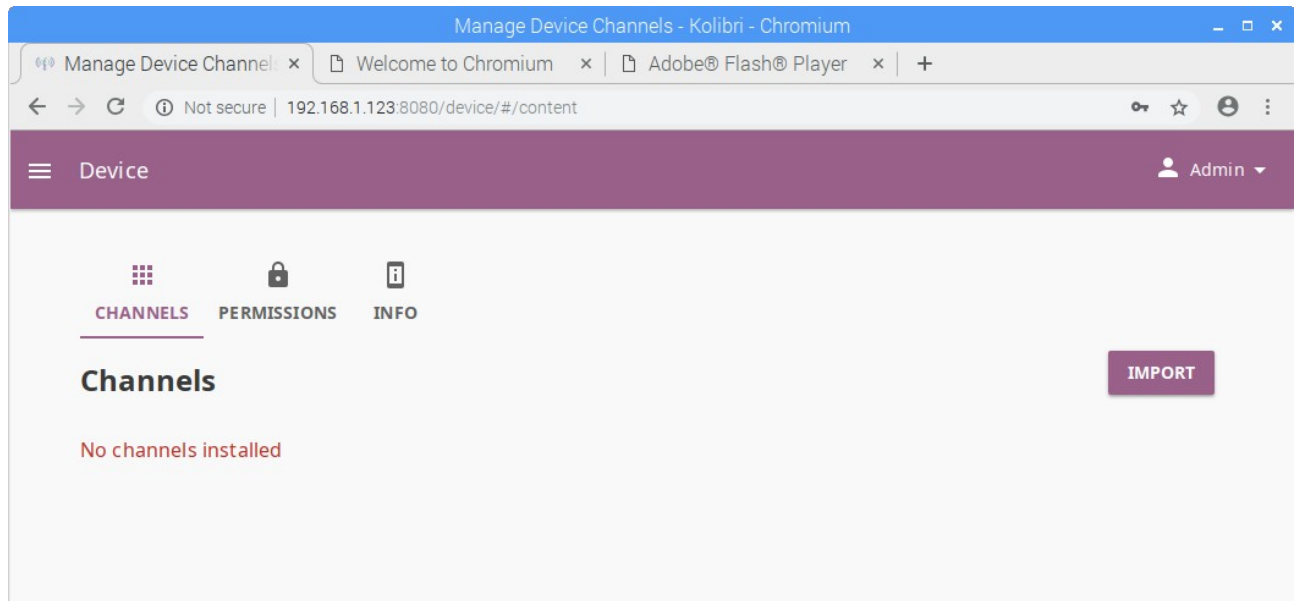
or x86amd version

# Adding content Kolibri Channels

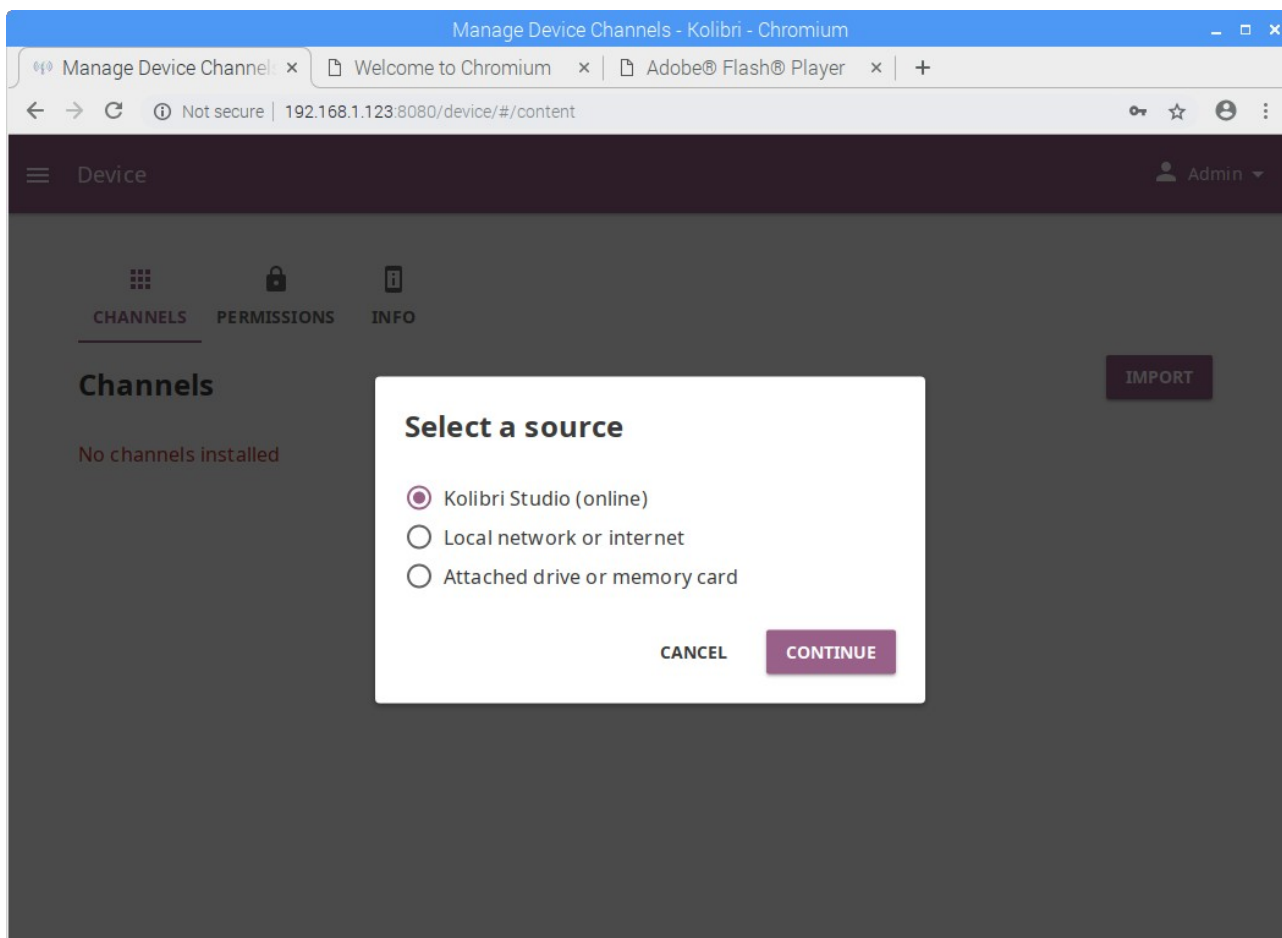
Content Source choices are the Kolibri Studio which will mean you connecting to the Internet. Another place on the internet or your local network or most likely a USB or hard drive

From the hamburger menu select Device

To chose how you will gather the content click on the IMPORT button

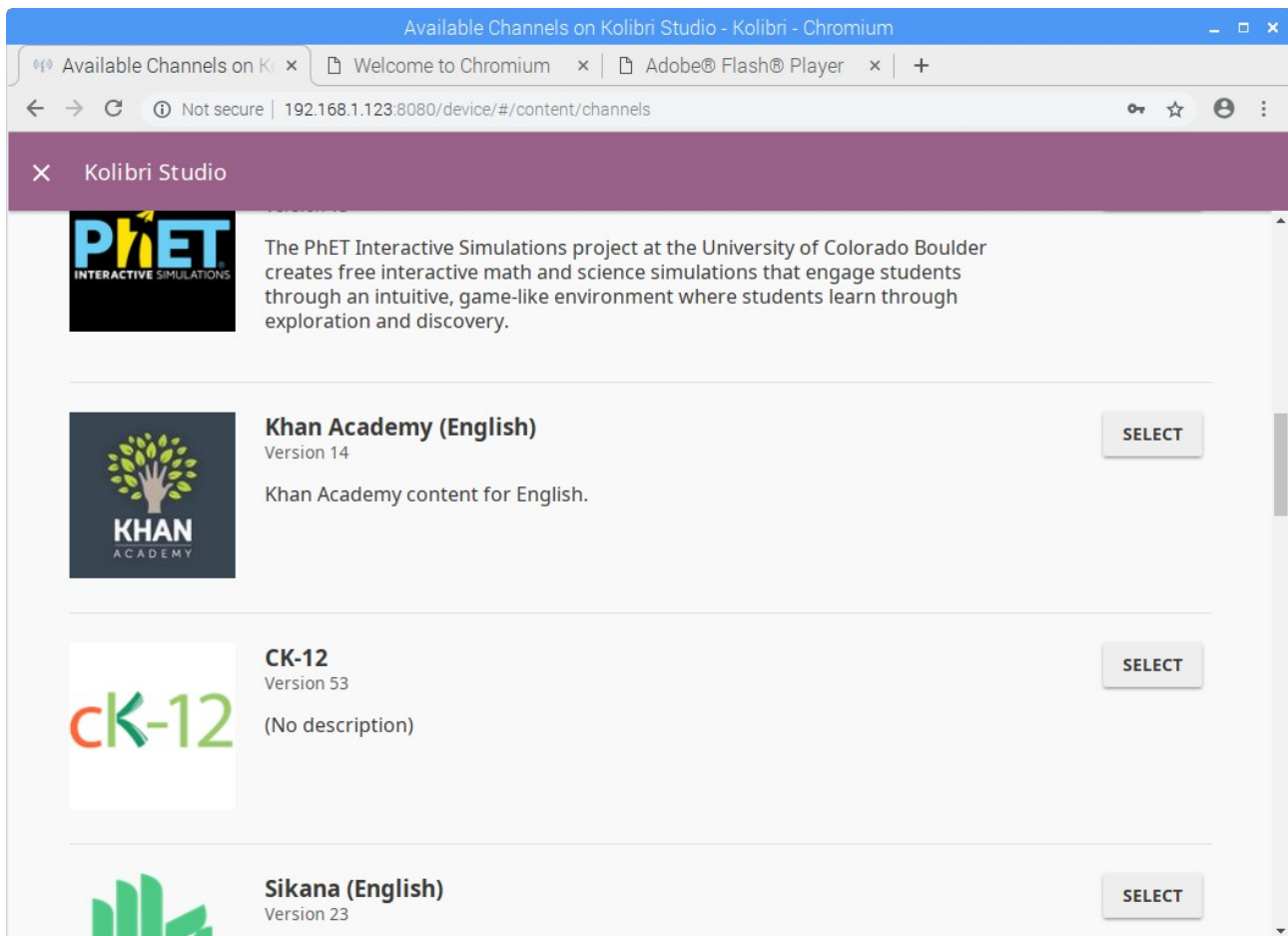


# Adding Content form the Internet



If the content for your installation is stored on the internet you must be connected to the internet to download it.

Choose Content eg Khan Academy and click the SELECT button to the right of that content.



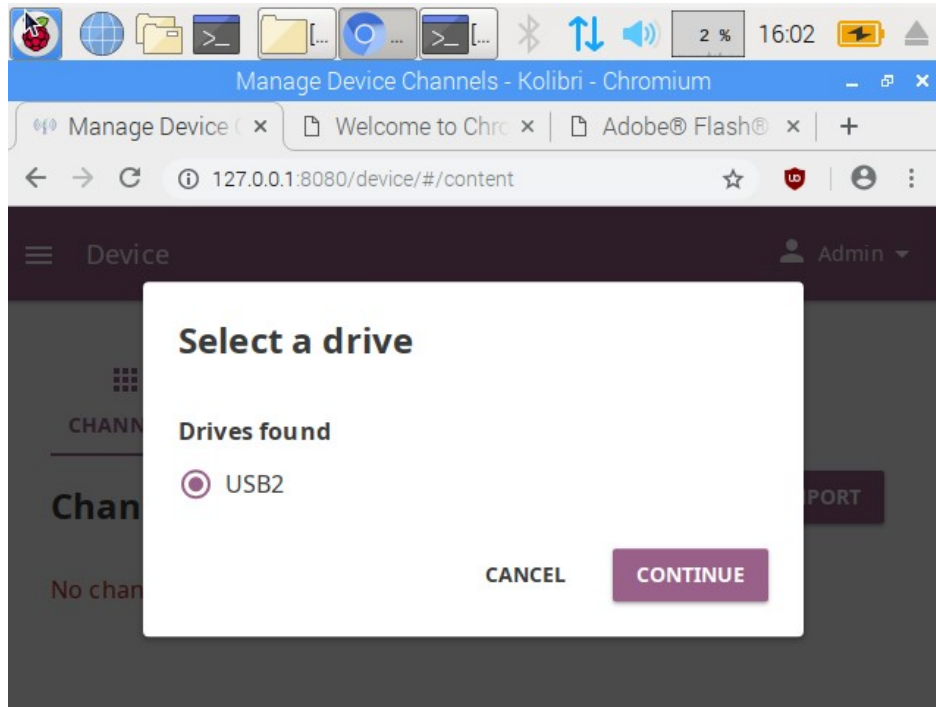
Occasionally downloading content may fail. This is usually due to internet connectivity. Should this happen simply cancel the current download and start the import process again.

**Note:** The content which was downloaded prior to the failure will be still on your computer and will not need to be downloaded again

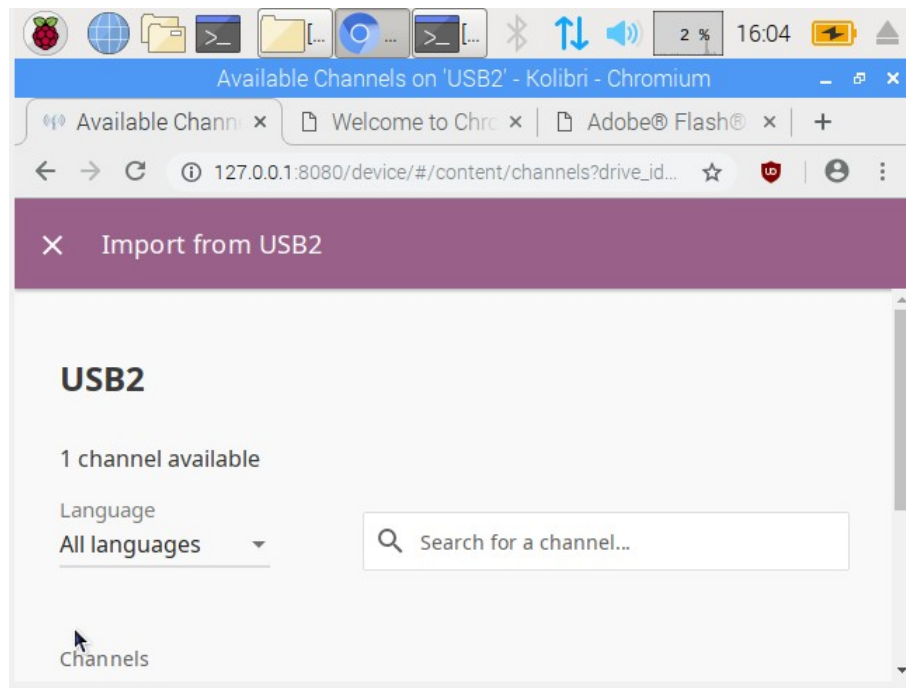


## Adding Content from a USB drive

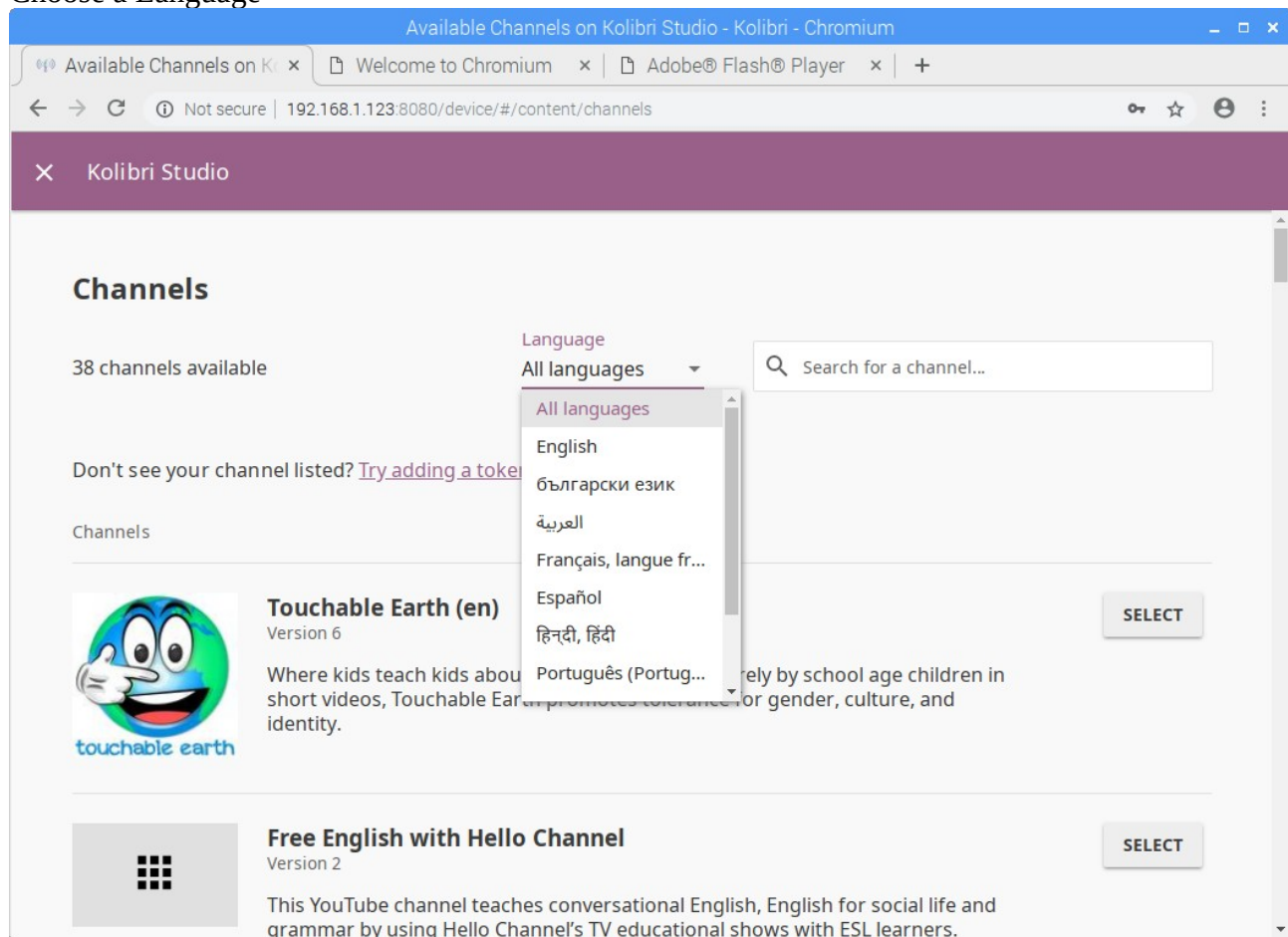
If you select Attached drive or memory card you will see, hopefully, the drive displayed



Select the language you want from the All languages drop-down. The languages you see will depend on how the source was exported from your provider

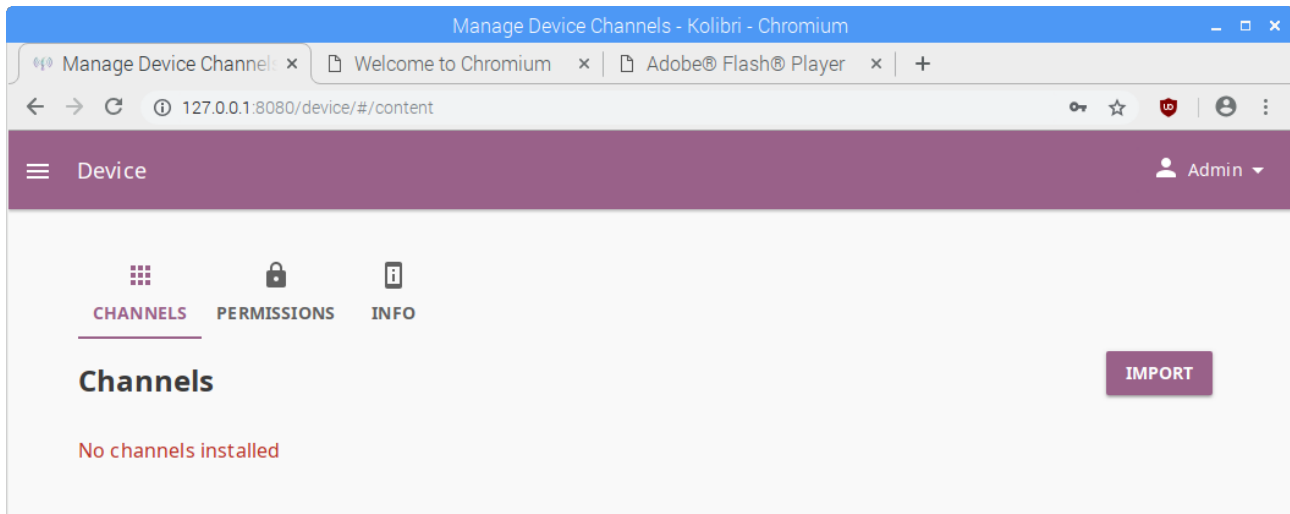


## Choose a Language



# Adding Content over the Local Area Network LAN

As for all import processes form the hamburger menu click device then IMPORT



Now click on the IMPORT button and select the Local network or internet radio button

**Select a source**

☐ Kolibri Studio (online)

☒ Local network or internet

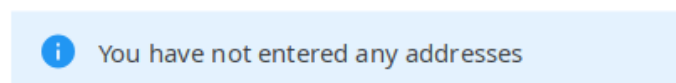
☐ Attached drive or memory card

**CANCEL** **CONTINUE**

You will have to add a new network connection if you have not done this before  
You will need the IP address of your Kolibri Server (computer)  
You will also need your (SSID) network name. Click on New Address

## Select network address

[New address](#)



**CANCEL**

**CONTINUE**

Now enter the IP address of your Kolibri server then the SSID of your network

My network server is 192.168.1.124 and the network name is kirkhome

## New address

Full network address

192.168.1.124

Network name

kirkhome

8/40

CANCEL

ADD

## Select network address

New address



kirkhome

http://192.168.1.124:8080/

Forget

CANCEL

CONTINUE

If it finds the server it will be displayed and you simply click CONTINUE to start the download process.

## Channels

9 channels available

Language

All languages ▾

🔍 Search for a channel...

Channels



### Free English with Hello Channel

Version 3

This YouTube channel teaches conversational English, English for social life and grammar by using Hello Channel's TV educational shows with ESL learners.

SELECT



### Global Digital Library - Book Catalog

Version 5

The Global Digital Library (GDL) is being developed to increase the availability of high quality reading resources in languages children and youth speak and understand.

SELECT

# Porting Kolibri content to other systems

## Using a USB device to port content

This process will allow you to copy the content on one machine to another by using only a USB memory stick. Particularly useful if there is no internet!

This requires you to choose the content you want, export it to an external hard drive or USB drive then import it to the new system.

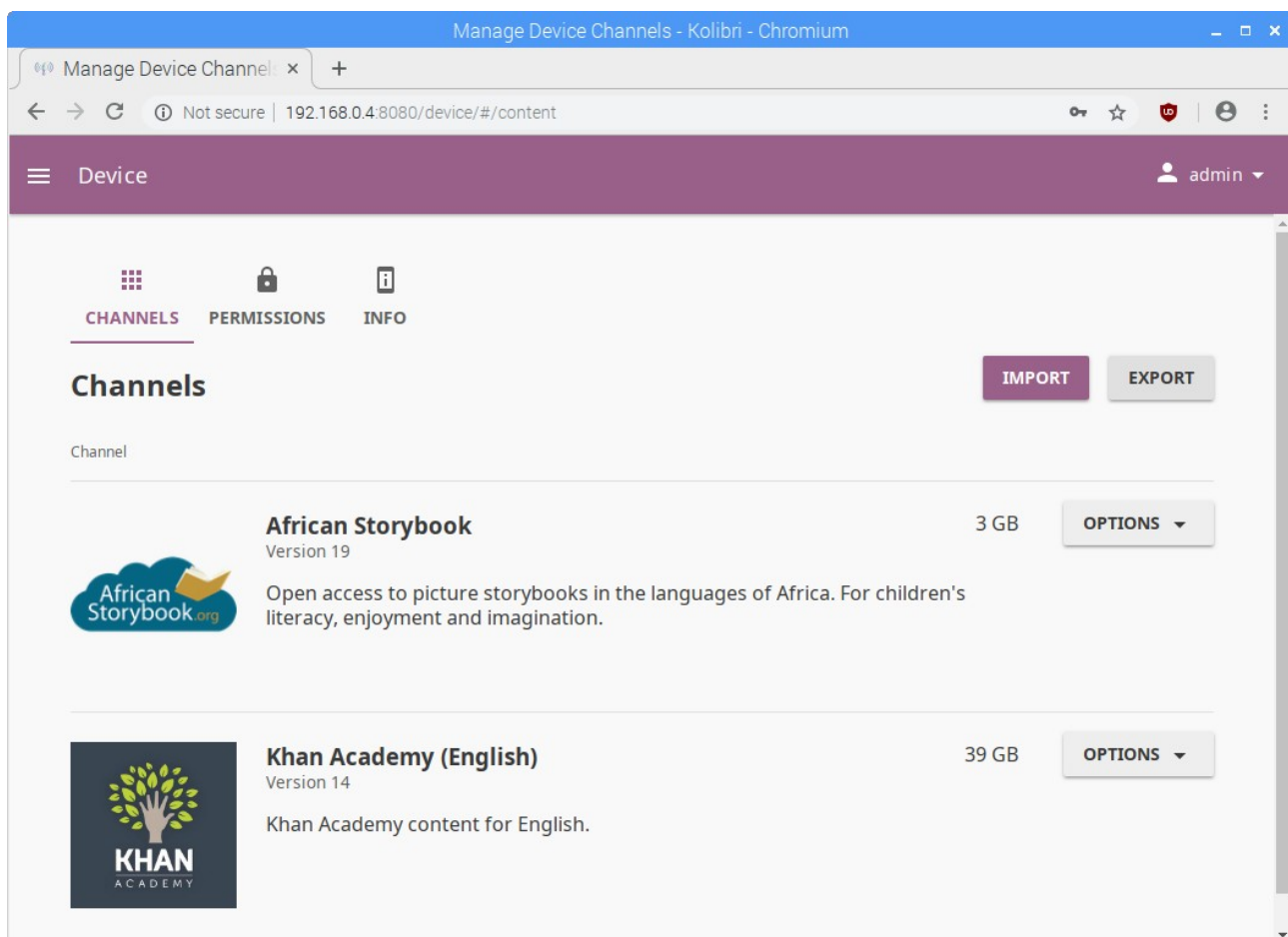
**Note:** you must be logged in as the administrator to do this.

Click on the hamburger menu on the top right of the Administrator's page and select **Device**

On this screen you have two options that import and export content to and from Kolibri.

If you have been following these notes from the beginning you will have already used the IMPORT option to add content. You can see we have added Khan Academy and African Storybook.

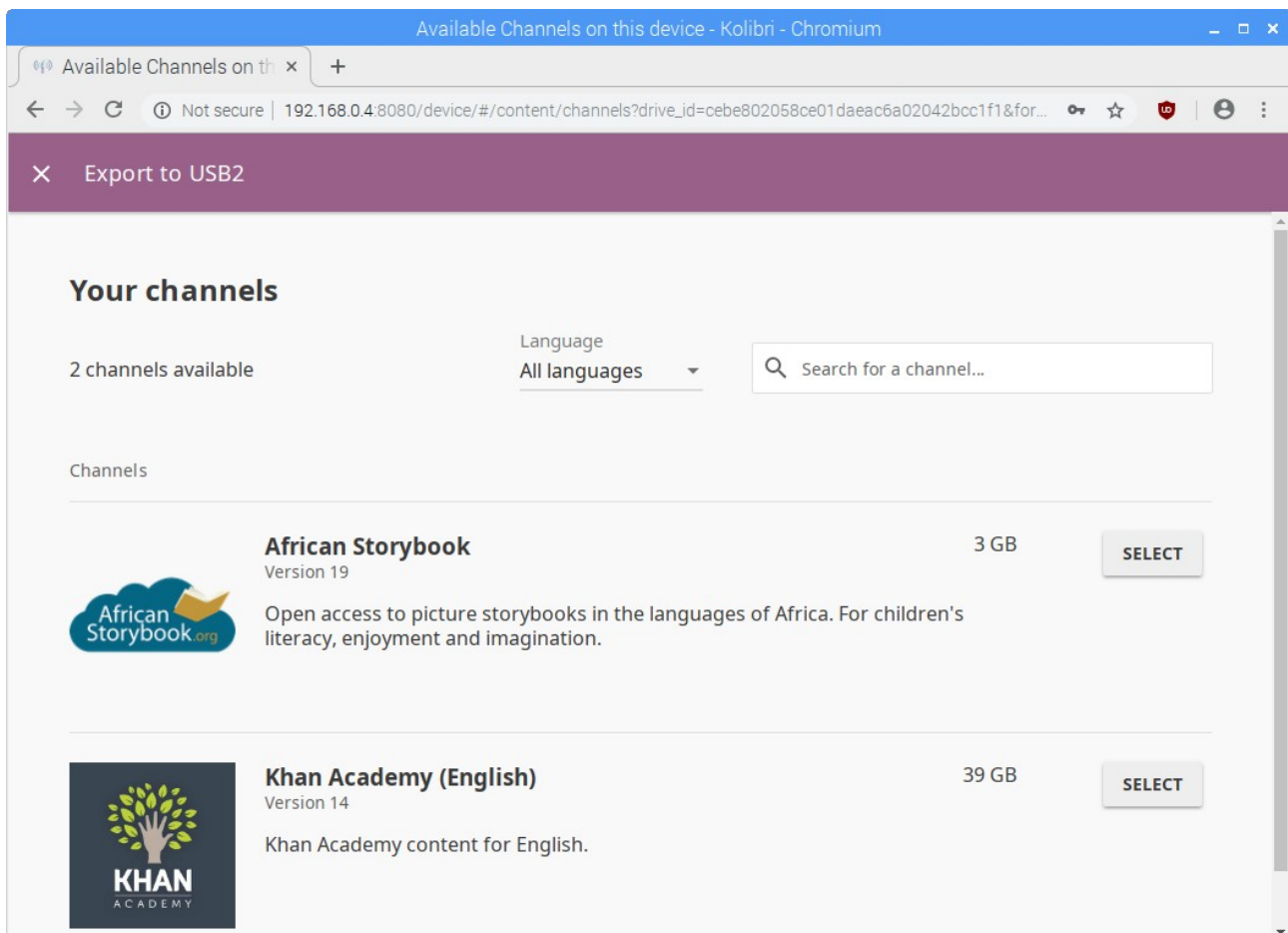
Now we are going to use the EXPORT option to port the African Storybook from this computer to an external device in this case a USB storage device. You will have to make sure your device has enough space to hold the files. You can see on the screen that African Storybook is 3 Gb so your storage device will have to have more than 3Gb of free space.



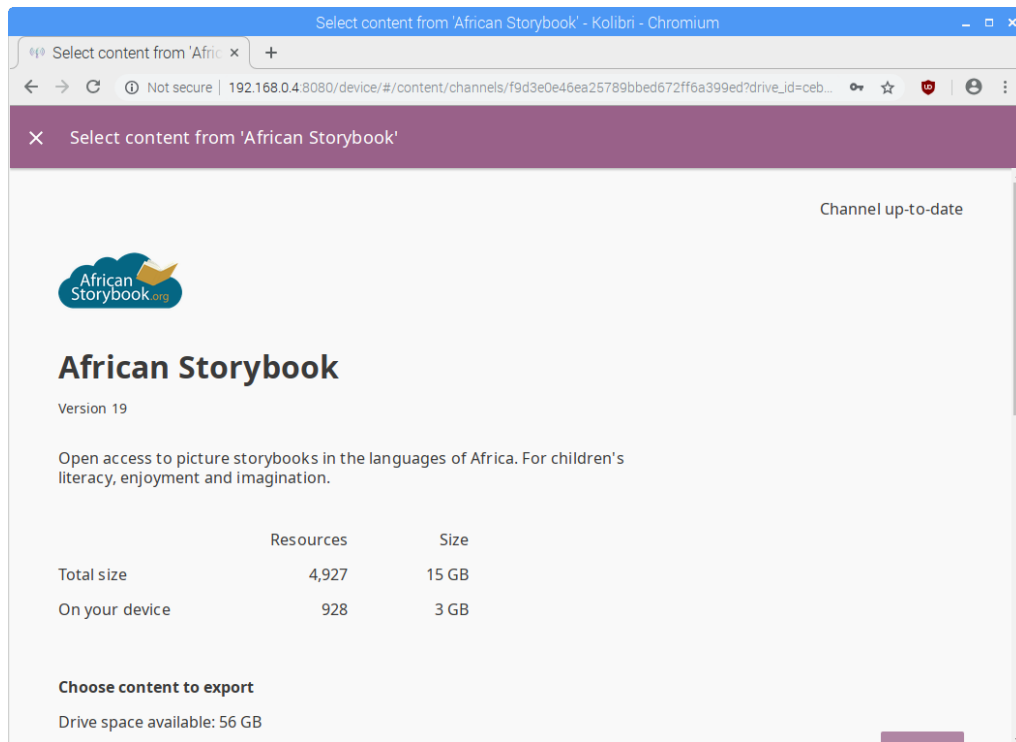
When you select Export you will be asked to select the device, here we are going to export to a USB storage device attached to the computer. Any attached external drive would be available to export to.



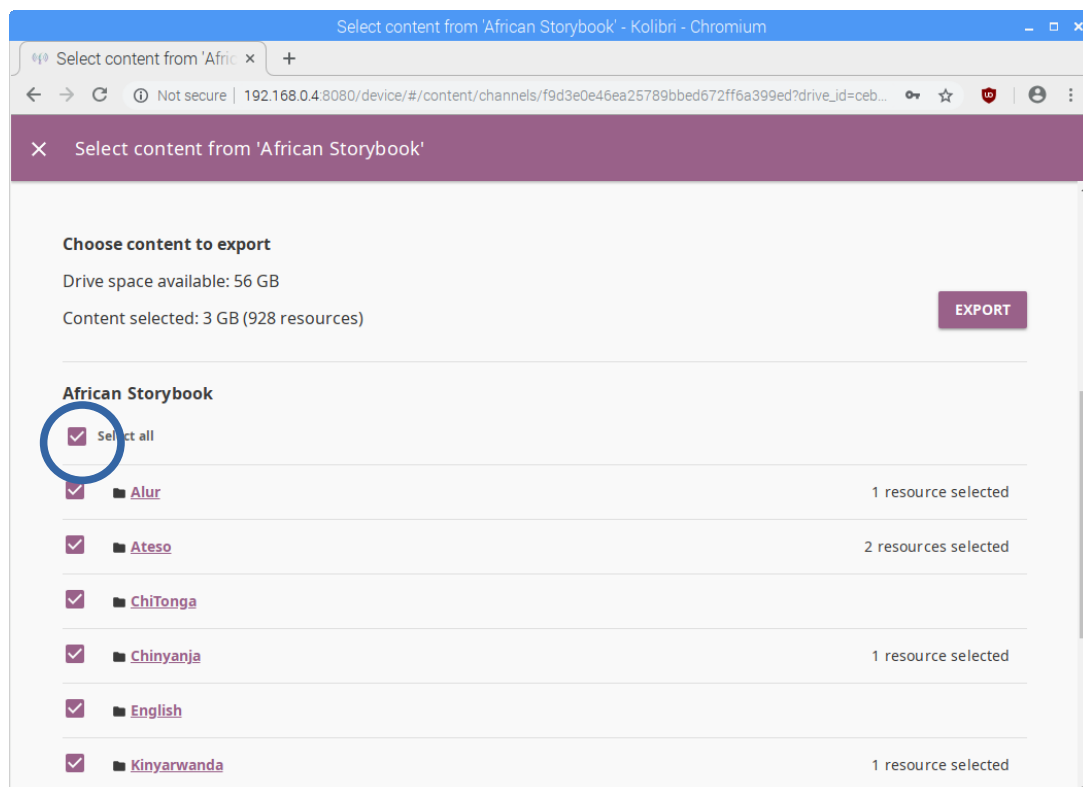
Once you have selected your device you choose what to export by clicking **SELECT** to the right of the content name



Here we have selected the African Storybook. There are lots of books to choose to export.

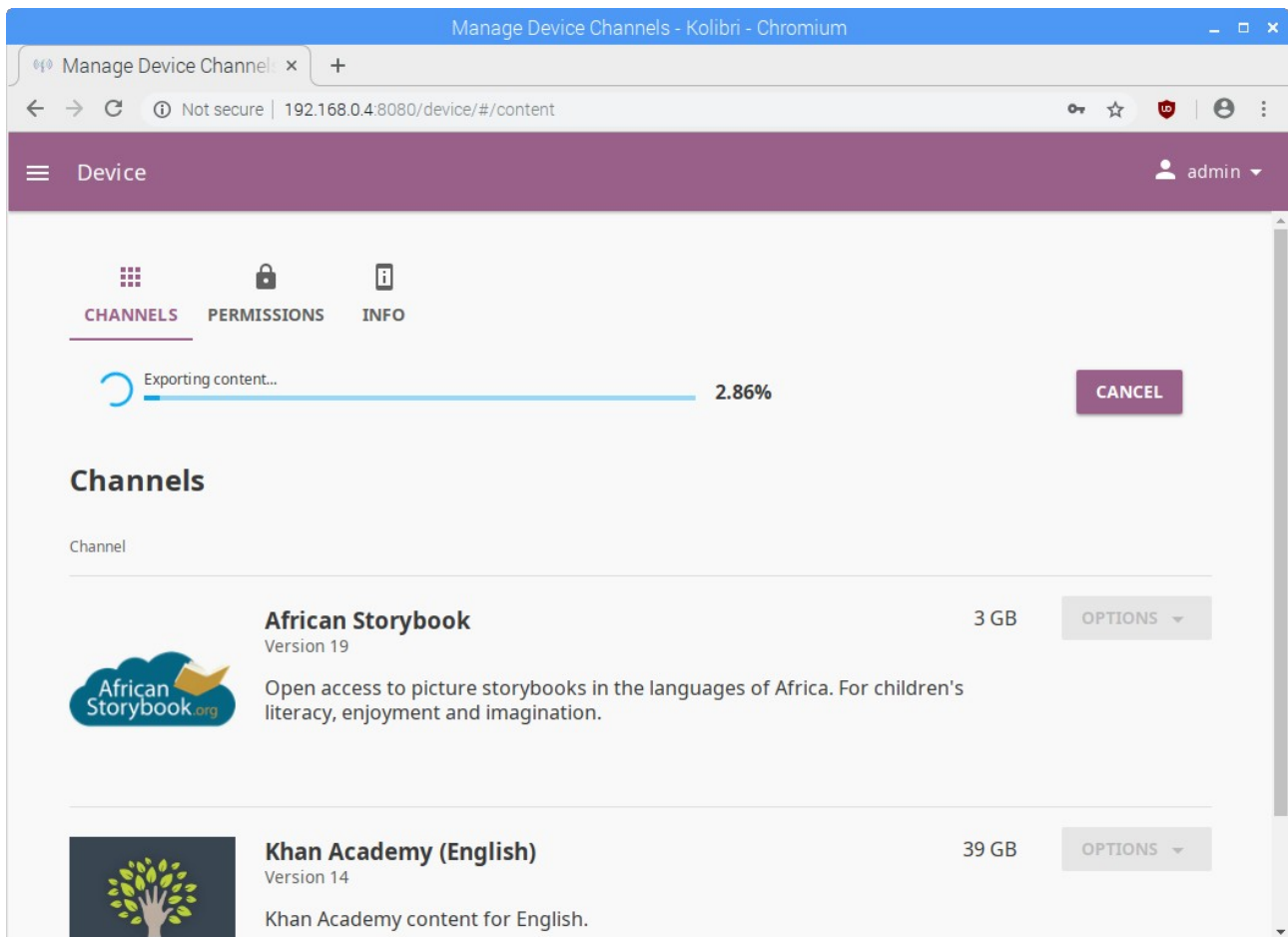


Here I have selected all the content from African Story Book, as you can see from the check box circled in the next screen-shot





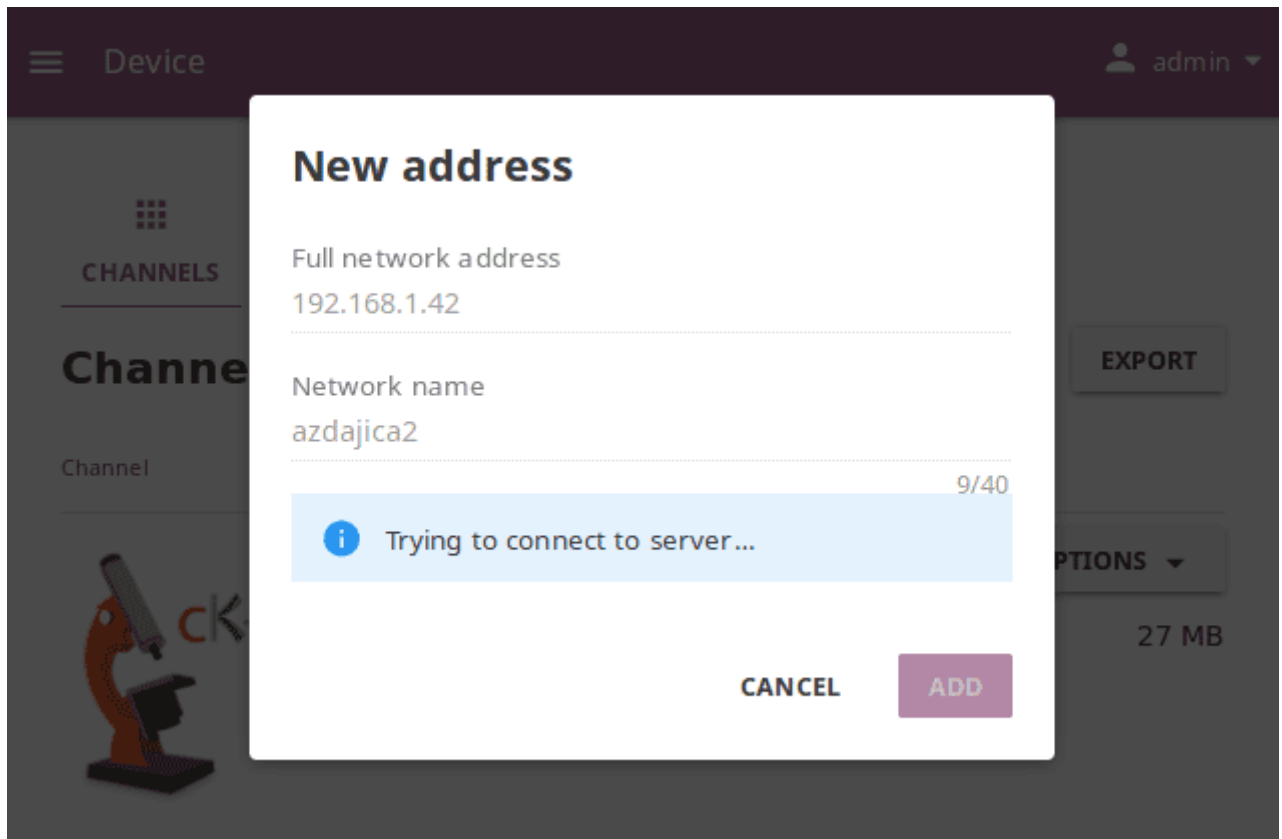
Finally we have to wait for the process to finish. This can take a long time with lots of content but it is faster to transfer content this way than download it from the internet.



Once saved on the USB device this content can be taken to any computer running Kolibri and added to that system.

## Porting content on a Local Area Network LAN

1. Choose option *Local network or internet*, and click CONTINUE.
2. Click *New address* link to add a new network address.
3. Input the full network address, and assign a name for this network. Don't forget to add the correct port if different from the default one 8080. You can use either the IP address or the domain name.



1. Click ADD to save this address to your device settings. If you later decide to delete it, use the link *Forget*.
2. Click CONTINUE and follow the same steps for selecting topics and resources as for the [import from Kolibri Studio](#).

# Creating the School Management System

Once you have your content you will want your learners to have access to it. This can be done in several ways, some more controlled than others. In a formal school arrangement it is likely that you will want to identify Teachers, Pupils and Classes. This is the traditional way of doing things here in Britain, where I'm writing this. The Kolibri system allows for this type of management.

Administrators can set up classes on the computer, assign teachers/coaches and learners to classes, and see every user's interaction and how much time they spend with each piece of content content.

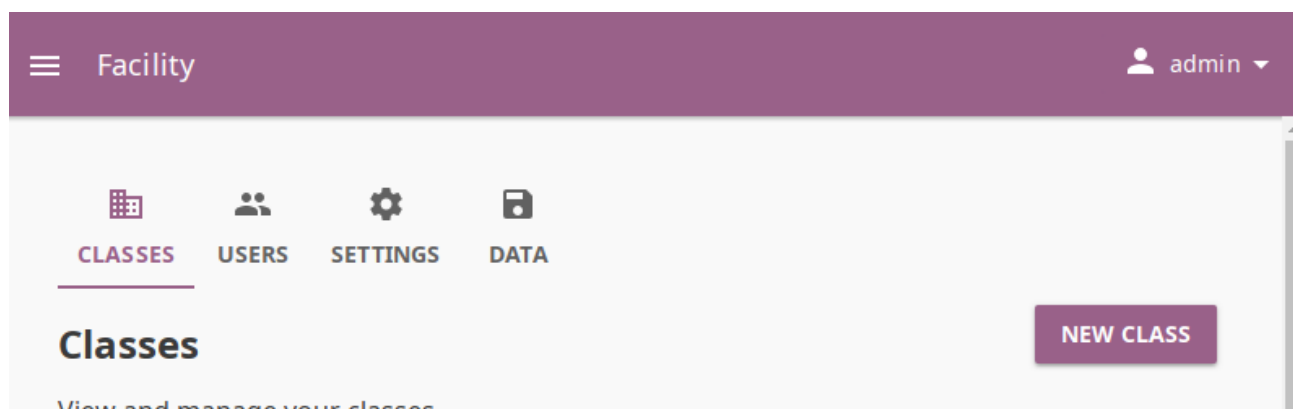
This section explains how, as an Administrator, you can do this.

Log into the system as an administrator. If you are sitting on the computer that has Kolibri installed then you simply open the browser and type, in the URL bar

127.0.0.1:8080

**Note:** This is the default name (IP Address) for the computer you are on. If you are on another computer then you would type the IP Address of the Kolibri computer.

This would give you access to the administrative screen.



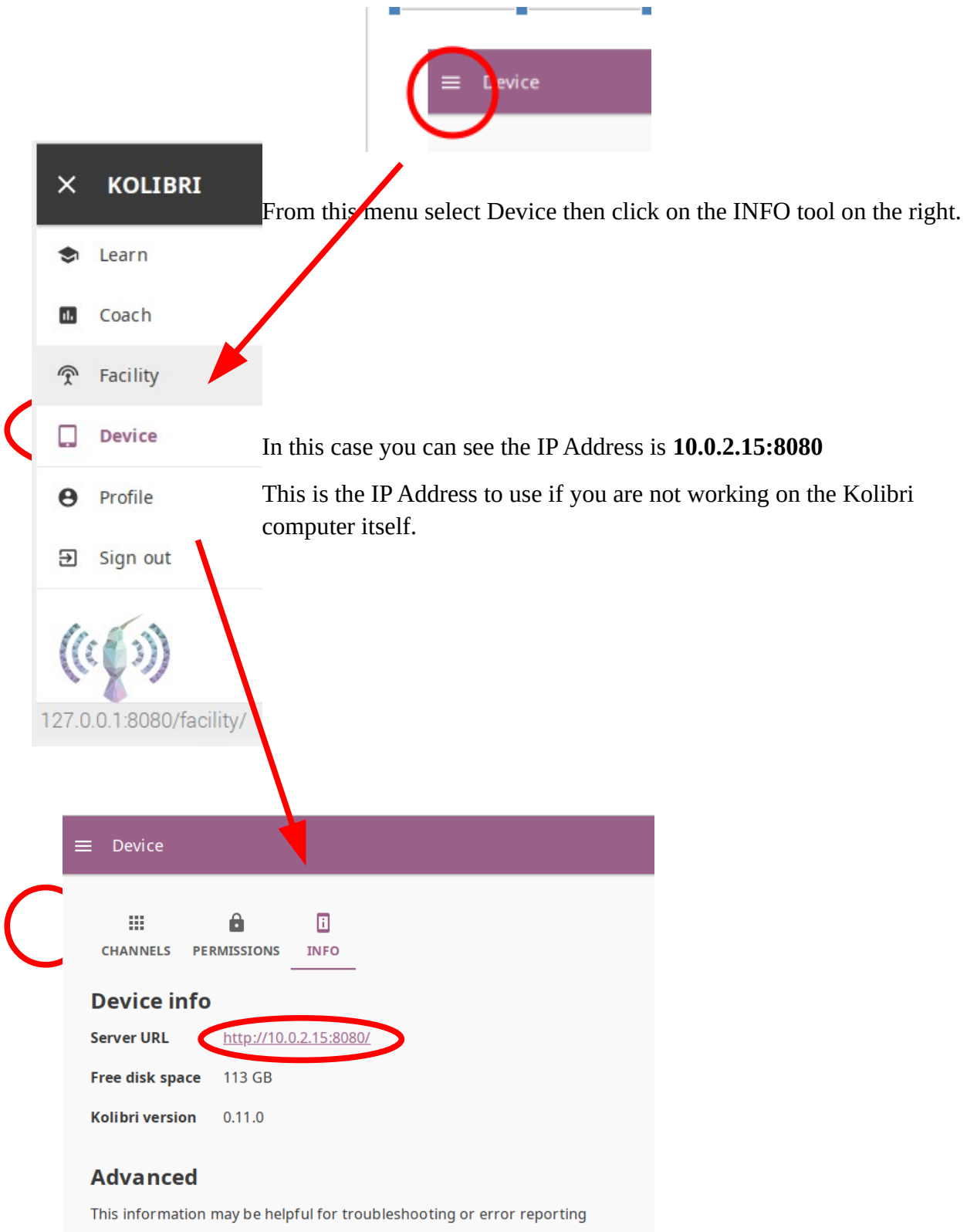
From here you can setup Classes, Teachers and Pupils. You can assign Teachers and Pupils to Classes and monitor the progress of the pupils.

These tasks will be outlined in the next few sections.

# How to find the IP Address of the Kolibri computer.

(Often called the Server).

Click on the hamburger menu, (circled red below), and the drop down menu will appear.



From this menu select Device then click on the INFO tool on the right.

In this case you can see the IP Address is **10.0.2.15:8080**

This is the IP Address to use if you are not working on the Kolibri computer itself.

**Device info**

Server URL	<a href="http://10.0.2.15:8080/">http://10.0.2.15:8080/</a>
Free disk space	113 GB
Kolibri version	0.11.0

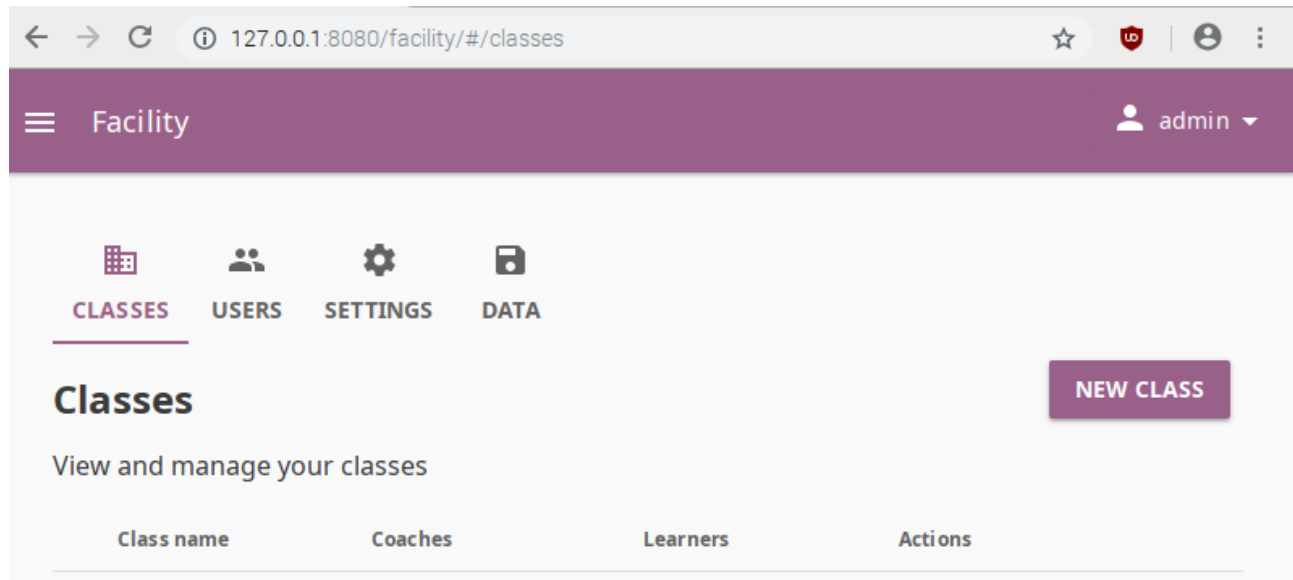
**Advanced**

This information may be helpful for troubleshooting or error reporting

## Adding Classes

A Class is a group of pupils set up to work together on some learning task.

Generally It would be assigned a teacher and often it would have specific learning materials associated with it.



Clicking **NEW CLASS** will prompt you for the name of the new class here it is **Class2019**

A modal form titled 'Create new class'. It contains a text input field labeled 'Class name' with the value 'Class2019'. To the right of the input is a character count '9/50'. At the bottom are two buttons: 'CANCEL' and 'SAVE'.

Once you have entered the class name click **SAVE** to store it .

It will appear as shown below. Clicking on the name will allow you to assign teachers and pupils to this class. You could also change the class name if you wished.

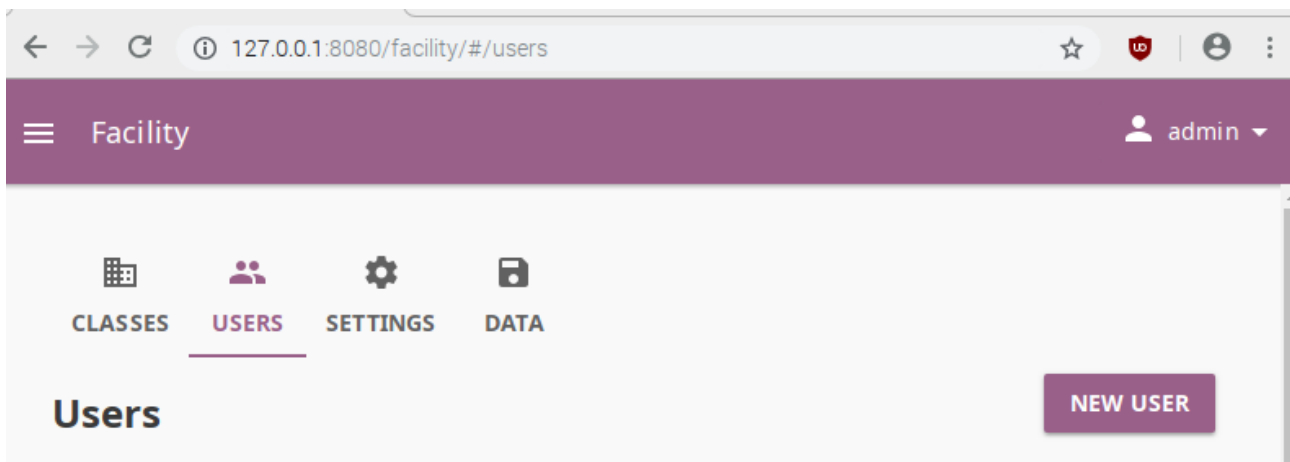
	<u>Class2019</u>	-	0	DELETE CLASS
--	------------------	---	---	--------------

And as you can see you can easily delete the class if you need to.

## Adding users

User accounts can be set up as learners, coaches, or administrators. Users can access the Kolibri server from most web browsers on any Linux, MacOS, Windows, Android, or iOS device on the same network, even if the network isn't connected to the internet.

Add users



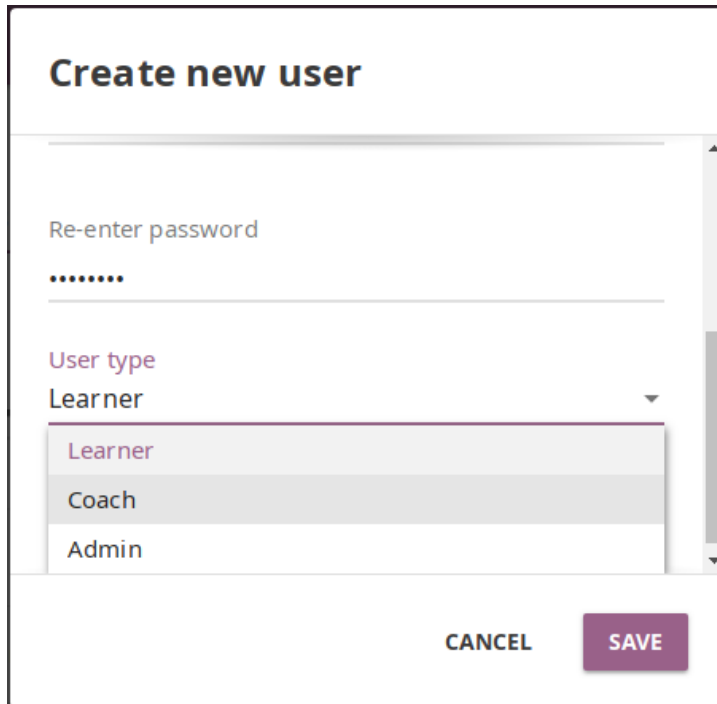
## Adding Coach/Teachers

Click the **NEW USER** tool

A screenshot of the 'Create new user' form. The form has a title 'Create new user' and three input fields. The first field is 'Full name' with the value 'Wendy Thompson' and a character count of '14/120'. The second field is 'Username' with the value 'WendyT' and a character count of '6/30'. The third field is 'Password' with a masked value '.....'. At the bottom of the form are two buttons: 'CANCEL' and 'SAVE'.

Don't forget to scroll down to see all the parts you need to fill in.

At the last part of the form select the User type.



**Create new user**

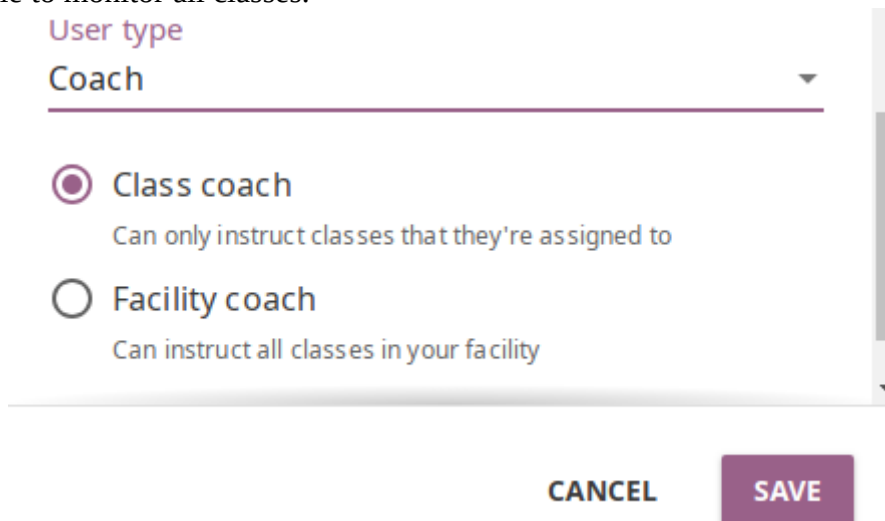
Re-enter password  
.....

User type  
Learner ▼

- Learner
- Coach
- Admin

CANCEL SAVE

If you select Coach (Teacher) then you will be asked if this person is a Class coach, in which case they will only be able to monitor the classes they are assigned to, or Facility coach in which case they will be able to monitor all classes.



User type  
Coach ▼

☒ Class coach  
Can only instruct classes that they're assigned to

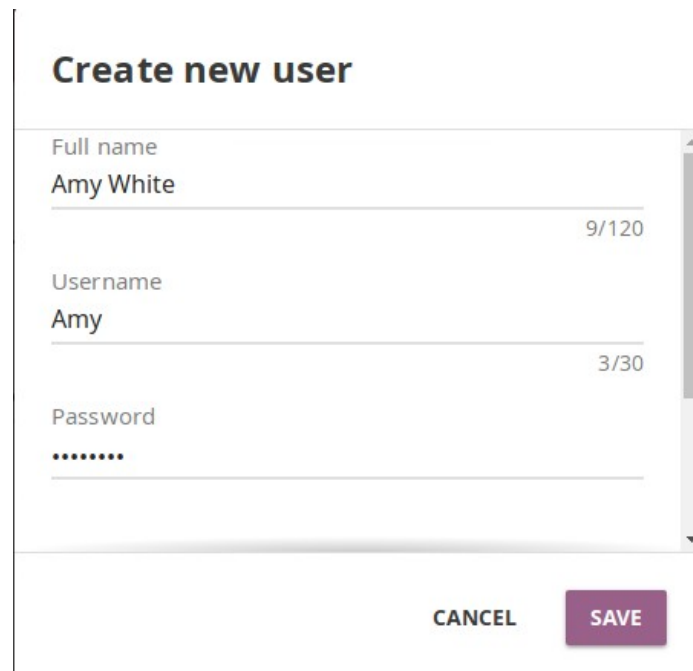
☐ Facility coach  
Can instruct all classes in your facility

CANCEL SAVE

Once you have filled in all the fields correctly click the SAVE button.

## Adding Pupils/Learners

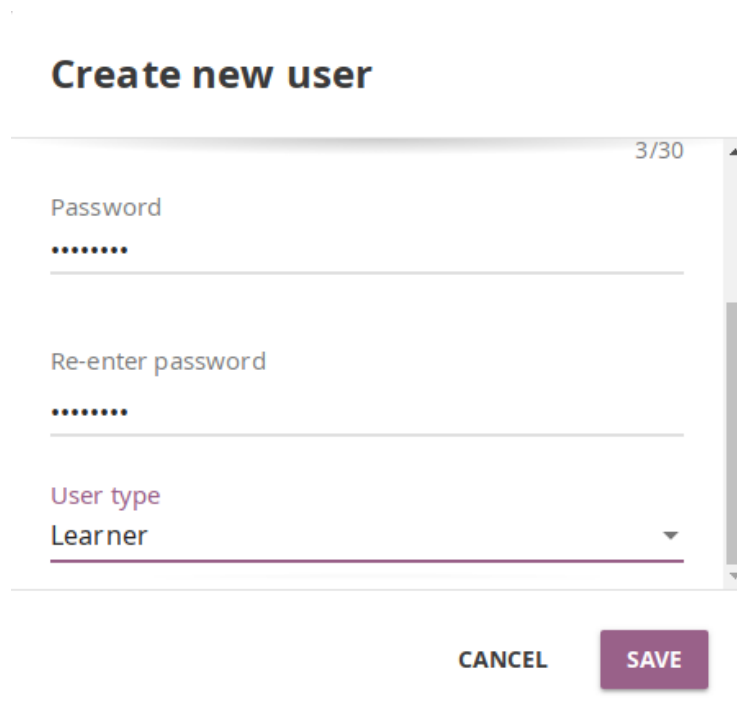
Adding a pupil is similar to coach (see above) but with fewer boxes to fill in.



The screenshot shows a web form titled "Create new user". It contains three input fields: "Full name" with the text "Amy White" and a character count of "9/120"; "Username" with the text "Amy" and a character count of "3/30"; and "Password" with masked characters ".....". At the bottom right of the form are two buttons: "CANCEL" and "SAVE".

Don't forget to fill in all the fields!

If the user is a learner (pupil) then the choice is straightforward



The screenshot shows a web form titled "Create new user". It contains three input fields: "Password" with masked characters "....." and a character count of "3/30"; "Re-enter password" with masked characters "....."; and "User type" with a dropdown menu showing "Learner". At the bottom right of the form are two buttons: "CANCEL" and "SAVE".

Click SAVE to complete the task.



## Adding Administrators

The final type of user to add is an administrator. Experience has taught me not to add Administrator unless the person really needs to have those privileges and is also prepared to take on the responsibility that goes with the role. If you have got this far by working through the document then you are already an administrator. Do you need another?

A quick list of what an Administrator can/should do

- View Coach dashboard and track progress of other users and usage stats for individual exercises
- Create/Edit/Delete other admins, coaches, and learners
- Create/Edit/Delete Classes and enroll users in them
- Create/Edit/Delete Groups in Classes and add users to them
- Create/Edit/Delete Exams and assign them to users
- Create/Edit/Delete Lessons and assign them to users
- View/Edit Facility configuration settings
- Export Detail and Summary logs usage data
- Import/Export Content channels
- View/Edit Permissions of other users

You should now have setup a Coach/Teacher, a Learner/Pupil and maybe an additional administrator.

How do you put these together to deliver your curriculum.

Find out what your curriculum is, plan your schemes of work, get to know where things are on Kolibri. Once you have those concepts firmly in your head you can now add content to each of the classes and associate pupils to those classes.

## **Adding content to classes**

## **Adding pupils to classes**

## Monitoring Pupils progress

# Choosing your curriculum

For this work we'll look at the Zambian curriculum.

Decide on a topic, say Mathematics, choose an area you're interested in,

Read through the government documentation

Look through the Kolibri content and decide what you want the class to focus on.

# How to Import users from a CSV file

If you keep your students details on a spreadsheet this will be invaluable.

## CSV file structure

To import users into Kolibri with this command, you will need to provide the user data in a CSV (comma separated variables) file format. You can export the CSV file from a spreadsheet (Excel, Google Sheets, LibreOffice Calc, etc.).

1	full_name	username	password	facility	class
2	Marc G.	marcg			
3	Peter B.	peterb			
4	Neela R.	neelar			
5	Carrie W.	carriew			
6	Michael G.	michaelg			

- Header row is optional, but if you do not include it, Kolibri will assume that you are providing the data in the following order:  
`<full_name>,<username>,<password>,<facility>,<class>`
- If you do include a header row, you can provide less data, or put them a different order:  
`<full_name>,<username>,<password>,<facility>,<class>`  
or  
`<username>,<full_name>`
- Only the **username** is required.
- When you do not provide passwords for the imported users, Kolibri will set the default password `<kolibri>` for those usernames.
- The facility can be either the facility name or the facility ID. If you do not provide the facility, Kolibri will import users in the default facility on the device. You can also specify the facility by adding the `--facility` argument in the command line (see below).

*Make sure not to include the angle brackets "< >" in the commands below.*

Kolibri running on Linux or OSX

Open the Terminal and run this command from the folder where the CSV file is located:

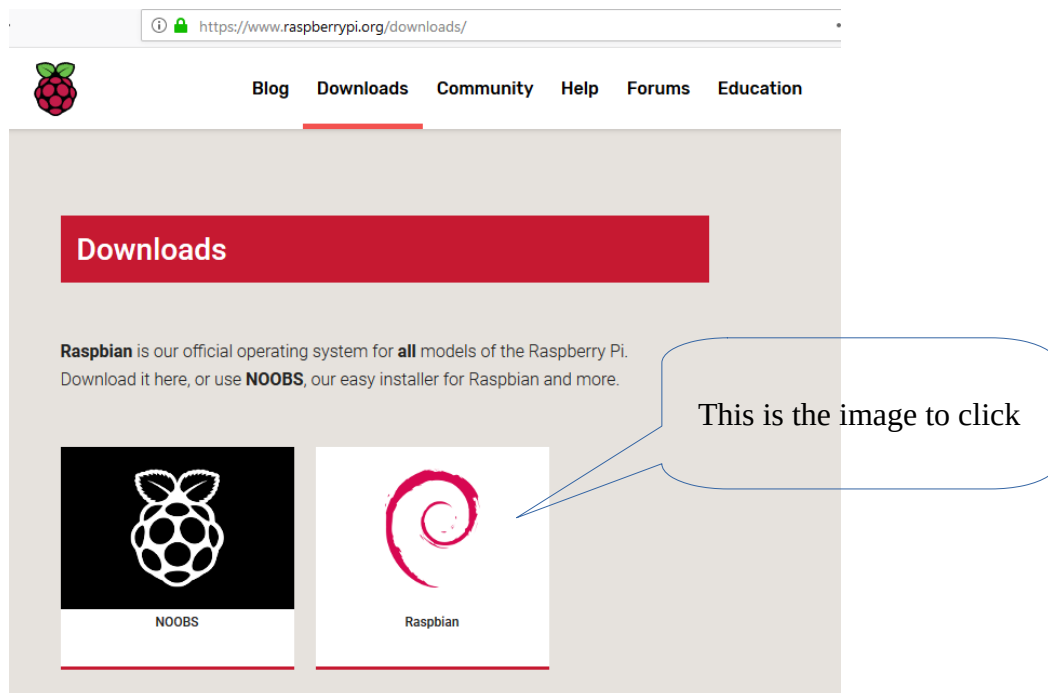
```
kolibri manage importusers your-csv-file.csv
```

If you want to specify the facility while running the command, add the `--facility` argument.

```
kolibri manage importusers your-csv-file.csv --facility <your-facility>
```

# Installing Kolibri on the Raspberry Pi (or Raspbian PC)

Caution this method is a bit techie. It also works on a Raspbian desktop for PC or Laptop. There are several varieties of operating systems for Raspberry Pi. This guide is intended for and tested on Raspbian on a Pi 3+, the most popular choice of OS, based on Debian. To obtain and install Raspbian, refer to the official documentation at [raspberrypi.org](https://raspberrypi.org). Raspbian for the Pi can be downloaded from [raspberrypi.org/downloads/](https://raspberrypi.org/downloads/)



Kolibri is intended for Raspberry Pi Model 3 and upwards.

**Note:** You can also install Raspbian Lite which uses fewer resources, but only has a command line interface. The instructions in this documentation work seamlessly on both.

**Note:** Most of these steps require an internet connection. It is not possible to build Raspberry Pi for Kolibri without fetching additional software packages from online sources.

Once you have installed Raspbian on your Pi you can then progress to installing Kolibri

Note: Before adding any new software to your Pi it is best to get it up to date using  
`sudo apt-get update`  
`sudo apt-get upgrade`



Now we need to upgrade the python3-cffi library, which is outdated on Raspbian. Upgrade it with the following commands:

```
sudo apt install libffi-dev python3-pip python3-pkg-resources dirmngr
sudo pip3 install pip setuptools --upgrade
sudo pip3 install cffi --upgrade
```

Next add the Ubuntu PPA with these instructions: this is where the software comes from and allows automatic updating provided you are connected to the internet.

```
sudo su -c 'echo "deb http://ppa.launchpad.net/learningequality/kolibri/ubuntu xenial main" >
/etc/apt/sources.list.d/learningequality-ubuntu-kolibri-xenial.list'
```

**Note:** there is a space either side of the >

```
sudo apt-key adv --keyserver keyserver.ubuntu.com --recv-keys
DC5BAA93F9E4AE4F0411F97C74F88ADB3194DD81
```

**Note:** this is typed all on one line

```
sudo apt update
```

```
sudo apt install kolibri
```

When asked questions during the installation, it is recommended that you use the default values. The pi account is the usual one when you log in it will have access to USB devices.

Finally when the command finishes, open the default browser at <http://127.0.0.1:8080> if you are typing on the computer which you are setting up or 10.10.10.10:8080 if you are using another computer.

Then proceed with the Initial Setup as outlined earlier in this document.

Note

The following issues are quite common on a Raspberry Pi:

### System time

This isn't set properly or resets during power-off. This causes errors while downloading software. For instance, SSL certificates for online sources will fail to validate. Ensure that you have the right timezone in /etc/timezone and that the clock is set properly by running `sudo ntpd -gq`.

### Storage space

This is often scarce. If you have a USB source for additional storage, you can use the kolibri manage movedirectory command or create your own symbolic links to have the data folder located elsewhere.

Using the built-in management command:

```
# Stop kolibri
sudo systemctl kolibri stop
```

```
# Move the data
kolibri manage movedirectory /path/to/your/external_drive
# Start kolibri
sudo systemctl kolibri start
```

### **I/O operations are slow:**

This means that a common bottleneck on a Raspberry Pi is file transfer between the MicroSD card or USB attached storage. Once Kolibri is up and running, this will not be important, but while copying several gigabytes of content it is. Both the SD card reader and the USB ports will limit you at about 50 to 80MB/sec. From experience, it doesn't matter much whether you are using the main SD card reader for storage or some media connected to your USB. However, you may find significant differences in the speeds of individual SD Cards. Try to use the best SD cards you can find, speed class 10, 128GB Scandisk Extreme has proved reliable.

### **Uninstall Kolibri**

From the command line:

```
sudo apt-get remove kolibri.
```

### **Upgrading Kolibri**

When you use the PPA installation method, upgrades to newer versions will be automatic, provided there is internet access available.

# Appendix A: Software installed by GiaKonda Solar Schools

**Note:** Before installing any new software update your existing

```
sudo apt-get update  
sudo apt-get upgrade
```

To get rid of unnecessary files

```
sudo apt autoremove
```

**Note:** To enable the adding of repositories with add-apt-repository you need to install software-properties-common using

```
sudo apt-get install software-properties-common
```

Once you have added a repository don't forget to update the sources list with

```
sudo apt-get update
```

## Thunderbird

Although this mail client uses more resources than some it is the de facto standard for email

```
sudo apt-get install thunderbird
```

If you want to remove the claws mail that is normally installed on Raspbian you can do this with

```
sudo apt-get remove claws-mail
```

## Shutter

Extremely useful for teachers to write notes with screen shots for students

```
sudo apt-get install shutter
```

## Gparted

A useful utility for examining your hard-drive. Not recommended for non-technical people

```
sudo apt-get install gparted
```

## Gimp

An excellent Image editor.

**Sudo apt-get install gimp**

## Openshot

A surprisingly useful video editor even on low spec. computers

**sudo apt-get install openshot**

If you have issues (there is an issue with add-apt-repository it exists but it is not yet installed.) try

```
sudo add-apt-repository ppa:openshot.developers/ppa  
sudo apt update  
sudo apt install openshot-qt
```

## Eject

Which is useful to eject usb devices without chancing their corruption.

**sudo apt-get install eject**

**Note:** This also gives you the `udisks` command which can be used to eject or unmount usb devices BUT be careful!

**udisks --unmount /dev/sda**

**udisks --eject /dev/sda**

To install the exFAT file system (microsoft issues)

**sudo apt-get update**

**sudo apt-get install exfat-fuse**

## Etcher

on a Raspberry Pi (I've had challenges with this too)

Download Etcher from [balina.io](http://balina.io)

Assuming you download stuff to the Downloads directory run the commands

**cd Downloads**

**chmod a+x Etcher-linux-x64.AppImage**

**./Etcher-linux-x64.AppImage**

## GNUCash

GNUCash is personal and small-business financial-accounting software.

**sudo apt-get install gnucash**

I have had issues with the next. If you know what's wrong please let me know.

## Kodi

A Media player that sometimes works!

**sudo apt-get install software-properties-common**

**sudo add-apt-repository ppa:team-xbmc/ppa**

**sudo apt-get update**

**sudo apt-get install kodi**

## Appendix B: Useful Linux commands

**Note:** Linux commands are always case sensitive and are usually in lower case. For commands that require elevated permissions, precede the command with **sudo** (short for superuser do)

**Note:** There is a booklet of Linux commands at [giakonda.org.uk/technical](http://giakonda.org.uk/technical)

### Commands for General use

These commands are all ones I have had to use to get Kolibri and other useful software running.

Some of this is a bit techie and you may want to skip those bits.

To find which release of Debian is installed

**lsb\_release -a**

To update your Pi use 2 commands

**sudo apt-get update**

**sudo apt-get upgrade**

To install new software

**sudo apt-get install <<name of software>>**

To remove unwanted software

**sudo apt-get remove <<name of software>>**

To clean-up unwanted files

**sudo apt autoremove**

To enable you to use the Pi Remotely

**sudo systemctl enable ssh**

**sudo systemctl start ssh**

To be able to use exfat

**sudo apt install exfat-utils exfat-fuse**

To find details of drives and partitions

**sudo fdisk -l**

or

**df -h**

To create a new directory

**sudo mkdir <<directory name>>**

## Commands For Networking

To set the IP address of a computer

**sudo ifconfig 192.168.0.99 netmask 255.255.255.0**

**sudo ifconfig down eht0**

**sudo ifconfig up eth0**

**netstat -s**

**Note:** to install ifplug use

**sudo apt-get install ifplugd**

**ifplug status**

**ifplug status eth0**

**whois giakonda.org.uk**