

What is Ham Clock?

Ham Clock is a program for the Linux Operating System (OS). It is an Amateur Radio aid, mainly for propagation, but easily adapted to individual needs. *Anyone can build a Ham Clock.*

What is Your Linux Fu?

1. Linux is my first language.
2. Not a master but I can do what I need to do.
3. I can muddle around if I have clear instructions.
4. I know what Linux is but have never used it.
5. I have no Idea.
 - a. I use Windows and am able to move and copy files.
 - b. Someone else takes care of my computer.
 - c. What's a computer?

What is a Raspberry Pi?

A Raspberry Pi is a Single Board Computer (SBC) designed in Great Britain for school kids to learn programming (coding). It is low cost, originally costing \$35 for a bare board. There are four basic boards and currently 7 versions. They are:

Model A – Original, Pi 2, Pi 3 – does not have Ethernet port

Model B – Original, Pi 2, Pi 3, Pi 4, Pi 5 – Original had only 2 USB ports, Pi2 did not have wireless.

Compute – This is a developer board with no ports attached – only solder points

Zero – Original, W, 2, 2W - Smaller footprint, limited and micro ports, headers not attached. Originally sold for \$5

There is also a Raspberry Pi Pico, but it is a micro-controller similar to an arduino, not a computer.

Don't quote me on these, I'm working from memory.

The Zero 2W is what we will use today.

If you bought a pre-loaded MicroSD card, skip to ***Insert MicroSD card***

On your DeskTop go to:

[Raspberrypi.com/software](https://www.raspberrypi.com/software)

Download the *Raspberry Pi Imager* and install it.

Plug the MicroSD card into your card reader then into your desktop.

Start Pi imager and follow prompts.

Device: Raspberry Pi Zero

OS: Raspberry Pi OS (32-bit)

Next

Would you like custom settings, click EDIT

Give it a name

User

Password

Be sure to write these down!

Enter wireless settings

This is also where you decide to allow SSH (Secure Shell). You can change this later. We're just going to use a keyboard for now (local control).

Insert MicroSD card into Pi.

Plug in display, keyboard/mouse and power.
It boots to desktop! (hopefully)

Set wireless network – icon in upper right

Now install updates, click on the terminal box. (4th from upper left)

Type -

```
sudo apt update ; sudo apt upgrade -y
```

This will take 15 or longer. When it has finished, reboot.

Type –

```
sudo reboot now
```

You can use the built in browser and go to

<https://www.clearskyinstitute.com/ham/HamClock/>

And click on “Desktop” to cut and paste the following commands.

When it has rebooted and the desktop has appeared open the terminal window and type – NOTE: it is a Capital o NOT a zero!

```
cd
curl -O https://www.clearskyinstitute.com/ham/HamClock/install-hc-rpi
chmod u+x install-hc-rpi
./install-hc-rpi
```

As it installs, it will ask a couple of questions:

Build for web access only - Type n (no, you can change this later if you comfortable with SSH).

Screen size – It will check your monitor so you probably want the largest.

installing a HamClock desktop icon - y

User Guide on Desktop – y

Auto starting HamClock. - y

Assuming it's all worked correctly, you'll have a message saying that HamClock installation is complete.

Reboot

```
sudo reboot now
```

When it reboots, it will automatically start HamClock and go into the setup routine.

Always use “shutdown” in terminal window or use the menu to avoid MicroSD card corruption!!!!

HamClock - Minimum parts

Raspberry Pi – At least a Zero 2w – for running HamClock only. A 3B or 4 will work for other programs

Power Supply - to match Pi

MicroSD card – at least 8 GB I usually get 16 GB – *you can get Raspberry Pi OS preinstalled*

MicroSD Card reader – if desktop does not have one

Display - either monitor or TV – preferably with HDMI

Display cable (be sure to check which cable/adaptor you Pi uses)

Case to match Pi – Can run Pi without, but a case will help keep it safer. You can use magnets, Velcro or double-stick tape to attach the case to the back of a monitor.

If you want to set up without Using SSH (run local)

Keyboard

Mouse

(Check for cables – some Pi models have limited/miniature ports)

Raspberry Pi Imager

<https://www.raspberrypi.com/software/>

Ham clock

Author's page – Files and info

<https://www.clearskyinstitute.com/ham/HamClock/>

Tutorials

<https://qso365.co.uk/2024/05/how-to-set-up-a-hamclock-for-your-shack/>

<https://forums.grz.com/index.php?threads/hamclock-how-to-from-a-linux-admin.773007/>

<https://www.n1fd.org/2023/08/24/hamclock/>

Complete system – if you want Plug 'N Play – It also has additional software

<https://inovato.com/products/quadra>

Official Raspberry Pi dealers (also available on amazon.com but they are often higher priced)

<https://www.adafruit.com/search?q=raspberry%20pi>

https://www.pishop.us/search.php?search_query=raspberry%20pi§ion=product

<https://www.newark.com/c/raspberry-pi/raspberry-pi-boards/prl/results>

<https://vilros.com/search?type=product%2Cquery&options%5Bprefix%5D=last&q=raspberry+pi>

*Vilros.com does not charge shipping on their **kits***

Vilros Raspberry Pi 3 Model B Plus Complete Starter Kit \$59

<https://vilros.com/products/v-kits-raspberry-pi-3-b-b-plus-complete-starter-kit>

Vilros Raspberry Pi 4 with 1 GB memory Kit \$85 Amazon

https://www.amazon.com/Vilros-Raspberry-Complete-Transparent-Cooled/dp/B07VFCZBLH/ref=sr_1_5?crd=RMRVDNYLRU9H&dib=eyJ2ljojMSJ9.Xksc4QMnpl0XTxlxg-mR1uaefWB0F86Gq07yi4EASebXrOnLyQvtLzMUfHOm9lxcxN6B8iHVGskvAZVX3kKMcFbmb5gU6kRccKZUsgmPRLUi5_KWwositiQvf0L4d8RceWVcfkKu9_Aho5xOcJuvQUrQmxtz_Kef-O5YwKEvO0yM5NaFOBKgyPV_iV7NIXO9YA8RqgiPRLFhrS_AZLVruzD1etEWTQtG8SJ-DMIGtQ.pFKWUFv3vfEF-emggdCAGR8b-l1P0_nUNyucCpwyQFw&dib_tag=se&keywords=pi%2B4b%2Bkit&qid=1757531008&sprefix=p%2Caps%2C1222&sr=8-5&th=1

CanaKit Raspberry Pi 2 W \$50 Amazon

https://www.amazon.com/CanaKit-Raspberry-Zero-Starter-Official/dp/B0CT1Q3PCD/ref=sr_1_10?crd=36VB7TJ4G2HK8&dib=eyJ2ljojMSJ9.w3pCMUONkFtZf5yinUvAEtUQ7F4zdFzX984qc0M0yzX4YWnC1cxl8k4aAVib31h4w_uod9s8D63BAfXWcNL0DoV3RwKjq-3SCLw5sUcjleZC1aH2wr3wVDK4e2_AxZhZUdOxIBIBLvgob1EHfKHLwP-1tdPGig3hmBb_9BnjZYBLVKvcEwRDs2Lhfb5T2kR866CJ7fiBvFSU7WBazyJtl8eyX5LfxzEazz-0hxiMZkk.KAKFBQ_DE7J-iUvdfo8HU3YCTHon9BfopXAFsWmRP9g&dib_tag=se&keywords=pi+zero2w+kit&qid=1757604721&sprefix=pi+zero2w+kit%2Caps%2C326&sr=8-10

Keyboard/mouse combo

https://www.amazon.com/Logitech-Wireless-Keyboard-Touchpad-PC-connected/dp/B014EUQOGK/ref=sr_1_1?crd=1CEXTMQZG2F8Q&dib=eyJ2ljojMSJ9.XVti8lyJf1afTqyhdIGzhrGP77dDjyBfQD70HPBzCmTzl3KMfx1-rkM0zsng8K95SjDcl5cxOx4KB8Bsn3C0axAZMBZe3QaFFDBBHP8tjrwPAbTRqd-xtwOL8jLscBXhQy2vIw0JO02AiPSbpzqkfkpVC0BIBqPXw3KFgwiuLUMVH3PK3IP4e-qDO7J4BCMMZ2LvL47QEwHt908Jxp6y2O1MbusnrGPAhGgSlySk.iGPxwn7zMme9gBv5HeULIPMB_hX7XpDiMCTFuqYnlOU&dib_tag=se&keywords=logitech+wireless+keyboard+with+mouse+pad&qid=1757555428&sprefix=logitech+wireless+keyboard+with+mouse+pad%2Caps%2C324&sr=8-1

<https://vilros.com/products/wireless-keyboard-raspberry-pi> - *Out Of Stock*

Other Raspberry Pi Projects

<https://hamprojects.wordpress.com/2020/09/06/raspberry-pi-for-ham-radio/>