VisionTest Install & Setup Guide

Github: https://github.com/MatthiasCLee/VisionTest

Ubuntu Install (Recommended)

This install requires:

- Ubuntu 20.04 install USB
- Install script on red USB

Step 1: Installing Ubuntu

To begin, power the computer off, and insert the Ubuntu install USB. If the computer is a Dell All-In-One, you may need to plug the computer in to ethernet. Once you have done that, power the computer on, and hit F12, F11, F9, or DEL depending on the computer model to enter into a one-time boot menu. Use the arrow keys to select the Ubuntu USB. It should be called “Mass Storage Device”, “General UDisk”, or anything relating to USB, or the manufacturer of the drive. Once selected, hit enter. You should eventually see an Ubuntu logo, and some text saying that filesystem checks are in progress. Press CTRL+C to skip filesystem checks, as they are usually not necessary. You should get to a screen prompting you to either try Ubuntu or install it. Press the one to install it. Now, you can proceed with the installation as guided by the installer, but enter the following settings on their screen when prompted to do so:

- Minimal installation
- Erase disk and install Ubuntu
- Log in automatically
- Download updates while installing

The installer should finish, and you should be prompted to restart the computer. Restart it as directed. Once booted into Ubuntu, skip through the post-install setup window; it doesn't affect anything. Ubuntu is now installed.

Step 2: Configuring Ubuntu

To begin, hit the windows key to bring up an applications menu. Search for or click on settings. First, go to notifications, and enable do not disturb. This will prevent notifications from appearing while the vision tester is running. Now, scroll down to power, and set the following settings:

- Dim screen when inactive: off
- Blank screen: never

Ubuntu is now configured.

Step 3: Installing VisionTest

To begin, insert the red USB containing the install script. Click on the USB icon on the panel on the left to open the USB in a file explorer. Right click in the file explorer, and click "Open in Terminal". In terminal, enter the following command:

```
bash ./linux_install.sh
```

You will be prompted for your password. Enter it when prompted. VisionTest will begin downloading dependencies, and installing. At some point, you will be asked for the receiver port. Enter “/dev/ttyUSB0”, and hit return. The VisionTest installer will now finish downloading and installing. Type “exit” in the terminal, and eject the drive through the file manager. Remove the drive. Shut down the computer via the power icon in the top right. Now, remove the keyboard, mouse, ethernet, and anything else plugged in other than the receiver. Power the computer back on, and if done correctly, you should be logged in automatically, a terminal window should appear, and eventually, VisionTest will launch. VisionTest is now installed. If it does not work as expected, see the Ubuntu Troubleshooting section. Ensure that the remote works as expected.

Windows Installation

Windows installation is not recommended, as VisionTest no longer is built to support windows, and Windows has a tendency to be unreliable.

This install requires:

- A computer running Windows
- Purple Windows install USB

Step 1: Copying files

Insert the purple USB, and copy everything to the desktop

Step 2: Installing programs

Open the “setup_files” folder, and run “Firefox Setup 99.0.1”. Install with all default options, and do not launch Firefox at the end, or close it if it auto-launches. Now, run “rubyinstaller-devkit-2.7.5-1-x64.exe”. Leave all options as the default, and when a command prompt window appears, press enter to continue with its default setup.

Step 3: Setting up Windows

Open the windows settings, and navigate to sleep settings. Ensure that the computer will never go to sleep, dim/lock the screen, or anything like that

Step 4: Installing gems

Open up a CMD window as administrator, and run the following commands:

```
gem update –system
```

```
gem install ffi
gem install rbtext
gem install selenium-webdriver
gem install serialport
```

Now, upon double-clicking on main.rb on the desktop, VisionTest should start.

Step 5: Configuring the receiver

To start, hit WIN+R, and enter “compmgmt.msc”. Navigate using the pane on the left to Device Manager, then to Ports (COM&LPT) in the middle. Here, look at all of the devices listed. Find one called “USB Serial”, and take note of the port next to it (COM#). Now, exit that, and right click on “ser_port.rb” on the desktop, and open it with notepad. Change the COM# text there to the one in compmgmt.msc, leaving the quotes and everything else. VisionTest should be functional now. Ensure that the remote works as expected.

Step 6: Enable autostart

To start, open the USB drive. Now, double-click on “add_to_startup.bat”. VisionTest should now start shortly after logging in.

Ubuntu Calibration/Setup

This setup requires:

- Red calibration USB
- Remote

Calibrating to screen

Note: if you have already configured the room length, it must be set back to 20.0 feet temporarily in order for the calibration to be accurate.

To start, insert the red USB. Now on the remote, push the unlabeled button directly right of the 30 button. An E should appear on the screen. Hold the short end of a credit card up to the E. Be careful, some All in Ones have touchscreens, and you may accidentally do something on it. Push the +/- buttons in the top right of the remote until the height of the E matches that of the short side of a credit card. VisionTest is now calibrated to the screen. Push the button right of the 30 again to exit calibration mode, and remove the red USB.

Setting room length

To start, insert the red USB. Now on the remote, push the unlabeled button right of the 80 button. A room size should appear in the top left of the screen. Push the +/- buttons in the top left of the remote until that room size is correct. Now, push the button next to the 80 again to disable

changing the room size. Unplug the red USB, and you are done.

Toggling mirroring

To start, insert the red USB. Now, push the unlabeled button right of the 400 to toggle mirroring. Once it is correct, remove the red USB.

Windows Calibration/Setup

This setup does not require anything.

Calibration to screen

To start, run VisionTest. Now, push the @ sign on the keyboard, and a number of pixels should appear in the top right of the screen. Push "C” on the keyboard to enter calibration mode. Hold the short side of a credit card up to the E, and push +/- on the keyboard until the size of the E matches that of the short side of the credit card. Take note of the number of pixels in the corner. Push @ to exit calibration mode. You can now exit VisionTest, and open the js folder on the desktop. Edit settings.js. Change the 10 to whatever number was in the corner. Save & Exit.

Setting room length and mirroring

To start, run the setup.rb on the desktop, and follow its instructions. You should be done.

Updating

Ubuntu

Note: You may need to redo the setup after updating

To begin, exit VisionTest via ALT+F4. Press CTRL+C to gain access to the terminal. Ensure the computer is connected to the internet via WiFi or ethernet. Now, run the following commands:

```
git checkout .
git pull
```

You may need to redo the setup steps now. VisionTest is now updated. Reboot the computer.

Windows

This update requires:

- **Internet connection or a USB drive**

To begin, obtain a copy of the updated files to put on the computer. Replace the old ones with the new ones. VisionTest is now updated.

Making the USBs

Items required:

- Ubuntu 20.04 ISO
- Three USB drives (minimum 4gb)
- BalenaEtcher program
- VisionTest source code

Ubuntu 20.04 install USB

To begin, open BalenaEtcher. Click on Flash from file. Choose the Ubuntu ISO file. Now, click Select target, and choose the USB drive. Click Flash!. You may be asked for your password. Once it finishes, you have an Ubuntu install USB

USB with install script and calibration

To begin, name the USB drive “VT”. Now, copy the file, “linux_install.sh” from the source code to the root of the flash drive. Finally, create a file called “vtcalib” with no file extension in the root of the drive.

Purple Windows install USB

This USB contains an older version of the program that is no longer supported. Obtain a copy of the one in the kit, and copy all of the files over.

Ubuntu Troubleshooting

User does not log in automatically

To resolve this, log in manually with your password. If VisionTest launches, press ALT+F4, followed by CTRL+C. Now, press the windows key to open the applications menu. Click on or search for settings. In settings, navigate to Users on the left pane. In users, click on Unlock if there is an option to. Enter your password if required. Now enable Log In Automatically. Reboot the computer, and it should work.

Any error during the install script

In this case, Ubuntu may have not installed correctly, or the installer might not have worked properly. To start, ensure the computer has internet access over WiFi or ethernet. Now, ensure that your user account has permission to use the sudo command. If you do not have permission, use an account with permission. To test this, enter “sudo ls” is the terminal. If a directory listing appears, you have sudo permissions. It is also recommended to use ethernet, as Ubuntu may not have support for the WiFi card in the computer. Now, repeat step 3. If the error occurs during the “Installing packages” section, run the following commands in terminal:

```
sudo apt-get update
```

```
sudo apt-get upgrade
```

If the error occurs during the “Installing gems” section, check the internet connection, and try re-running the script. If the error occurred somewhere else, or the errors keep repeating, rerun the whole installation starting with installing Ubuntu. If the error is persistent, try a different computer, or make an issue on Github: https://github.com/MatthiasCLee/VisionTest

VisionTest does not launch on startup

If a terminal window appears on startup, and contains an error,

Remote does not work

Ensure that the receiver is plugged in and functional. To test if it is functional, press a button on the remote, and a red light should flash on the receiver. To start, put the receiver in a different USB port, preferably USB 3 for most reliable results. If it still does not work, run the following command in the terminal:

```
ls /dev/ttyUSB*
```

If you only see “/dev/ttyUSB0”, try a different receiver or remote. If you see several files, unplug any extra accessories from the computer, and try again until there is only one.

Windows Troubleshooting

Remote does not work

Redo step 5, as Windows can change COM ports randomly. Try to avoid rebooting the computer if it is known to do this.

Anything else

Redo the installation, or make an issue on Github:
https://github.com/MatthiasCLee/VisionTest