

ScreenRepeat – Install Guide

This guide will help anyone set up ScreenRepeat from scratch.

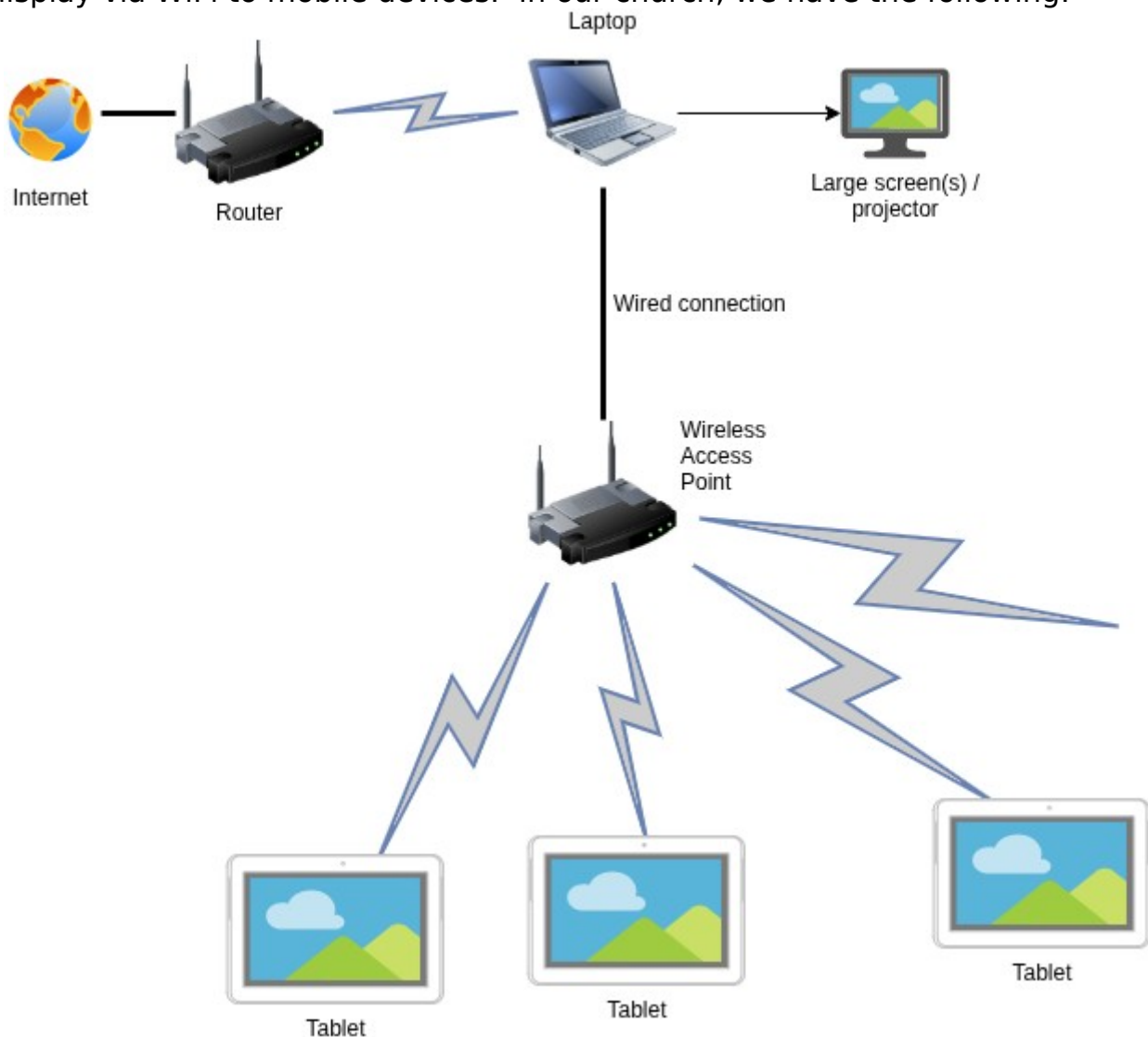
There is a blog at <https://pistontrain.wordpress.com/> and files can be downloaded from <https://github.com/pistontrain/ScreenRepeat/>.

Overview

ScreenRepeat is a Windows-based system intended to stream the contents of a screen to mobile devices for the purpose of improving accessibility to screen contents for people with visual impairments.

It is designed to be used in a church environment for content typically shown during services (hymn words, pictures, videos).

The key elements are a main Windows-based PC or laptop that streams its display via WiFi to mobile devices. In our church, we have the following:



An Internet connection is not required, but it is likely that one will be present. Although we have a dedicated wireless access point with an isolated (from the Internet) WiFi, similar results may be achieved by using a pre-existing WiFi.

Setting up the Laptop

These instructions are for Windows 11 but will probably be similar for other versions of Windows.

Preliminaries

1. Prepare the folders
 - Make a new directory on your PC on the top level of C: called screenrepeat, and another directory inside that called webpages, so that the webpages folder is at c:\screenrepeat\webpages\
2. Install Mongoose Web Server
 - Download Windows binary file for the free edition of Mongoose from <https://mongoose.ws/binary/>. You have to accept the license; note the free license is for personal use only – not commercial.
 - Move the downloaded file (e.g. mongoose.exe) into the folder you created above, i.e. c:\screenrepeat\webpages\
3. Install VLC Media Player
 - Download VLC **version 3.0.0, 32-bit** (i.e. not the latest version) from <https://download.videolan.org/pub/videolan/vlc/3.0.0/win32/vlc-3.0.0-win32.zip>
 - Extract the .zip file to c:\screenrepeat\vlc-3.0.0
4. Get the ScreenRepeat files
 - Go to <https://github.com/pistontrain/ScreenRepeat/> and click on '<>Code' followed by 'Download ZIP'.
 - Open the downloaded .zip file and extract the files as follows:
 - i. **index.html** to c:\screenrepeat\webpages
 - ii. **ScreenRepeat.bat** and **start_webserver.bat** to c:\screenrepeat.
 - Make a shortcut on the Desktop to c:\screenrepeat\ScreenRepeat.bat

Configure ScreenRepeat

ScreenRepeat may need to be configured with the width of the primary screen. It uses this to set the starting, top-left point of the secondary screen, which is the display to be streamed to the tablets.

1. Navigate to the folder c:\screenrepeat.
2. Right-click on **ScreenRepeat.bat** and click **Edit**. This should open the file in notepad.
3. Check the screen width is set correctly. To find your primary screen width, right-click on the desktop and select **Display settings**, then on the Settings that open, scroll down and select **Advanced display settings**. Select screen 1, and read the Resolution – e.g. 1366 x 768, 1920 x 1080. The first number (1366 or 1920) is the width.
4. Find the line starting 'set primary_screen_width='. If necessary, change the value after the equals sign; the default is 1366. Then save the file in notepad.

If required, the IP address of the gateway, i.e. the wireless access point, can be changed by altering the setting of **set ipgateway=** in ScreenRepeat.bat. The default is 192.168.10.1. The port for the web page can be changed from the default 8090 by editing the line set **port=** in ScreenRepeat.bat. The port for the VLC streamed image can be changed from the default 8080 by editing the line

starting **start /WAIT "VLC Server"**. You may need to make these changes if your Access Point can't be configured with an IP address starting 192.168.10.

Add a shortcut to your desktop to ScreenRepeat.bat by dragging the ScreenRepeat.bat file to the desktop using the *right* mouse button. Ours looks like this:



ScreenRepeat v3

Configure Windows

1. Configure Windows to use its WiFi connection for Internet, rather than the wired connection which now goes to ScreenRepeat – without doing this you will not have internet access on the PC while the ScreenRepeat wireless access point is connected:
 - Search for Network status, then Change adapter options. Right click on the Ethernet adapter and select Properties.
 - Go to IPv4 properties | Advanced, and set: Automatic metric=NO, interface metric=100.
2. Optional: add the mongoose and VLC executables as firewall exceptions, allow for private and public networks. You will probably be asked when you first run ScreenRepeat if you would like the firewall to allow these programs through – accept for both public and private networks. Alternatively the same effect could probably be achieved by opening ports 8080 and 8090 in the firewall settings.

Setting up the WiFi access point

- Our WiFi access point (AP) is accessed by browsing to 192.168.10.1, with username “admin” and password “jesus” (the answer to every question in church). If you are using a different access point, login with the admin username and password; sometimes the defaults are printed on the bottom of the unit.
- Setup the AP to act as DHCP server from 192.168.10.100 upwards.
- Don't use 192.168.1.n, as that may be in use by the other (Internet) WiFi.
- Reserve the IP 192.168.10.100 for the laptop – this is the IP that the tablets will be set to connect to.

WiFi Signal Strength

Some experimentation will be needed to discover what hardware works for the environment it will be used in. We found that while the system might work well when tested with no one in church, on a Sunday morning with lots of people there the signal strength could be much different.

Setting up a Tablet

This needs to be performed only once on each tablet. The instructions are slightly different depending on the type of tablet; these instructions are for

Android tablets only. An Internet connection is needed to download the app – **so this may need to be done before bringing the tablet to church.**

For best results, configure the tablets as follows:

- Brightness set to maximum;
- Lock display rotation to horizontal;
- Turn off all sounds, Bluetooth and screen lock.

Then install Touch Lock, to prevent the screen turning off and accidental operation of the touch screen, and add the icon on the desktop to start ScreenRepeat. Follow the below instructions.

Install Touch Lock

For example: Samsung Galaxy, Google Nexus, Amazon Fire.

1. Connect to the Internet
2. Open the Google **Play Store** app, which has an icon similar to this:



3. Search for “Touch Lock” and find the **Touch Lock** app by **KIDISCRAPTE LTD.**, with the icon similar to:



4. Install then open Touch Lock.
5. Follow the instructions to test Touch Lock. You can set it up to lock the volume buttons too if you wish.

Add Shortcut to Start ScreenRepeat

1. Connect the tablet to the WiFi network “**ScreenRepeat**”. There is no password.
2. Open Google Chrome. Go to the address **192.168.10.100:8090**. If the IP hasn’t been reserved for the PC you are using, as described in the section “Setting up the WiFi access point” you will need to use the actual IP address of the PC instead. To find this:
 - a. Open a command prompt by pressing Windows key + R, type cmd then press enter.
 - b. Type **ipconfig** then press enter.
 - c. Look for the entry that starts “Ethernet adapter” and find the line in that section starting “IPv4 Address”.
 - d. Enter this address into the tablet browser, followed by **:8090**.
3. If everything has been set up correctly, you will see the same as the large screens connected to the laptop.
4. Add a shortcut to the desktop by clicking the three vertical dots to the right of the address bar and selecting **Add to home screen**.
5. That’s it! The tablet is set up.

Version History

V1.0	05/10/18	First version
V1.1	27/Nov/25	Added ScreenRepeat shortcut on desktop, reason for

		changing AP IP, refresh throughout.
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