

parkrunPortable Manual Installation Instructions

Lawrence Billson & Dominic Watkins, 2016

Prerequisites:

You will need:

- A Kingston MLWG2 wireless router
- A USB memory device
- A wired Internet connection
- A computer with:
 - WiFi
 - A wired Ethernet port
 - Terminal emulation software (e.g. PuTTY) or 'terminal' on Mac OSX
- A short Ethernet cable to connect your PC to the MLWG2

This procedure is intended for people familiar with the UNIX shell.

A short note, if you chose to do this with something other than an MLWG2, you're totally on your own. The software will work with other platforms but it will require custom kernel modules. Other types of mobile routers may not have enough flash memory for the software, or they may not be supported with OpenWRT.

I'm a competent UNIX user with an MLWG2, c'mon, give me a shot!

These instructions assume you have the following knowledge:

- Connecting to a UNIX system using telnet and ssh. (terminal commands)
- Changing IP addresses on your computer (network settings)
- Working from a command line
- On mac use terminal to execute the commands below

As long as you understand that you're not going to get remote or phone support, here's the process flow:

- Prepare a USB stick with the upgrade software
- Boot and upgrade your MLWG2 to run OpenWRT
- Enable WiFi
- Connect your MLWG2 to the Internet and Install the parkrun portable software
- Testing

Prepare the USB stick

1. Format your USB memory to be FAT32

2. Download the USB stick software from github
<https://github.com/lawrencebillson/parkrun/raw/master/tmp/manualusbstick.zip>
3. Unzip the files into the root folder of your USB stick

Install OpenWRT on your MLWG2

1. Confirm that your MLWG2 is completely powered off (no LEDs lit)
2. Confirm that your MLWG2 is NOT connected to a wired network.
3. Insert the USB memory
4. Hold down the power button on your MLWG2 for at least 10 seconds until the blue lights come on
5. After waiting for the MLWG2 to boot, connect to the MLWG2-??? from your WiFi computer
6. Open terminal and type in window: `telnet 192.168.201.254`
Username: admin
press return when prompted for password(password is blank).
You will be greeted with a # prompt.
7. To copy the OpenWRT software onto the MLWG2s flash memory copy and paste each of these commands one at a time. Once finished you can close the terminal window. Note: When the (e)/(w) at the end stops switching they are finished:

```
mtd_write write /media/USB1/openwrt-15.05.1-ramips-mt7620-mlwg2-squashfs-sysupgrade.bin KernelA
```

Then copy and paste:

```
mtd_write -r write /media/USB1/openwrt-15.05.1-ramips-mt7620-mlwg2-squashfs-sysupgrade.bin KernelB
```

Enable WiFi

1. Connect your PC directly to the MLWG2 via a short Ethernet cable
2. In your PC's network window set your PC's wired IP address to manual and enter:
IP address: 192.168.1.20
Subnet Mask: 255.255.255.0
There is no need for a default gateway or DNS server.
3. Open terminal and type in window: `telnet 192.168.1.1`
4. You'll next be prompted for a password, It will say make it a strong one and won't show anything while you're typing but anything will do as long as they are both the same!
IMPORTANT: Remember what password you use!
5. To enable WiFi on your MLWG2 type in this command in terminal:

```
cp /etc/config/wireless /etc/config/wireless.dist; cat /etc/config/wireless.dist | grep -v disable > /etc/config/wireless; reboot
```

Connect to your MLWG2 to the Internet, download parkrunPortable

1. Remove the Ethernet cable, ensure no Ethernet cable is connected to your MWG2.
2. Wait until the blue light stops flashing.
3. Go to your network settings and connect to the MLWG2 using the OpenWRT network.
4. Type in terminal: `ssh root@192.168.1.1`

```
udhcpc -i br-lan
```

5. The above command will cause the MLWG2 to get a different IP address. You need to find out what this address is (try looking in your router's DHCP lease table)
6. Login via SSH to the above address.
7. To configure your device to use Google DNS - copy and paste in terminal:

```
echo nameserver 8.8.8.8 > /etc/resolv.conf
```

8. Check you're on the Internet - copy and paste in terminal:

```
ping www.google.com
```

Let it run for a few seconds; you should see responses from Google. Press control and C together to move on.

9. To install the wget package copy and paste in terminal:

```
opkg update; opkg install wget
```

This takes a few minutes depending on your network connection.

10. To execute the automatic installer copy and paste in terminal:

```
wget --no-check-certificate -qO- http://github.com/lawrencebillson/parkrun/raw/master/tmp/installpkg.sh | sh
```

Again this takes a few minutes depending on your network connection.
This will automatically reboot your device into parkrunPortable mode.

11. Wait until the blue light starts flashing, then disconnect the wired Ethernet.

Testing

1. Connect to the parkrunPortable on the wireless LAN, password: bushypark
2. Copy this address into your web browser: 192.168.2.1
You should now see the controls for parkrunPortable in your browser window!
3. Read Bron's instructions (from the GitHub wiki) and process some results before using it on a live parkrun; most run directors should have access to the test system.

Notes:

- The procedure for installing OpenWRT on the MLWG2 comes from here:
https://drive.google.com/folderview?id=0B0CKgINyN0URflpRWFMMyWUFQa1dsRUJldlpoZTAtnGIHSTdJY041NGd2ZmRfSDRhNkNOSkU&usp=drive_web

- If this goes wrong, sorry but we can't offer phone support.
- The root password changes when you install the parkrunPortable software, feel free to ^C out of the auto-install and change it to whatever you want.