Md380tools-menu
Menu subset of the md380tools-vm Virtual Machine
Warren Merkel, KD4Z

Installation instructions to install the KD4Z Toolkit framework on bare metal Linux.

This is not a fork of the md380tools-vm project, but merely a subset. You will be running exactly the same scripting framework, and will enjoy the automatic update features of the main VM type of installation.

If you would like to take advantage of the easy-to-use menu features of the md380tools-vm project, but would rather run the scripts natively in your preferred flavor of linux, these steps will allow you to do just that. If you are running MMDVM on a Raspberry Pi, you are almost ready to go!

Prerequisites:

You must have an existing installation of linux. You can use a stand-alone Linux machine. Or you could run Linux inside a Virtual Machine of your own choosing. Or you can use Raspian running on a Raspberry Pi.

Installing the md380tools-menu framework:

Start in a non-privileged user' home directory. (Don't miss the space "tilda" at the end)

cd ~

If you have already been using the md380tools, you might need to remove it first. Depending on how it was installed, md380tools needs to be installed as a non-privileged user. Some "pre-built" images for MMDVMHost and other md380tools VM images, install md380tools as "root". Since we will be running as a non-privileged user here, we need to just remove it using super-user elevation. When you run "glv", the md380tools and md380tools-vm folders will be completely removed. This needs to be able to occur as a non-privileged user.

So, from your current user's home directory. (cd ~ to get there)

Run this: *ls md380tools*

If you see a bunch of files fly by in the listing, fine. We need to just remove them. This is the easiest way to clean house in case they are owned by the root user. They will be put back each time you run glv anyway.

Run this command to remove the existing folder, if it exists. (If your Linux distribution doesn't have sudo, be sure to "su -" to become root first)

sudo rm -rf md380tools

If you didn't see the md380tools folder had pre-existed in your image, you will need to perform installation of md380tools prerequisites as described here:

https://github.com/travisgoodspeed/md380tools#preparation-of-build-environment

Be sure to perform these steps as well:
https://github.com/travisgoodspeed/md380tools#additional-steps-for-linux-based-installations

Don't forget this last important step as listed on the main md380tools page.

```
cd md380tools
sudo cp 99-md380.rules /etc/udev/rules.d/
```

You will need to log back in after running the above line, and before attempting to use the flash commands. You can wait to do this until the end of the instructions however. If you forget to do this, you will get an error when attempting to access the USB device.

If you see weird errors pop up during the glv, you might need to go back to the above links and make your you didn't skip a step!

Additional requirements for running md380tools-menu:

You will also need to install the zip and unzip programs. If you have apt-get installed, run this as root user or use sudo:

```
sudo apt-get install zip unzip
```

Otherwise, you will need to determine how to install the zip and unzip programs based on your particular linux distribution.

Recent updates to dmr-marc have required downloads of their data to be in JSON format. To handle that format, the Toolkit will need to use the "request" module in python. If you are running on a Debian based distribution, you can will need pip, first. Run these to be sure:

```
sudo apt install python-pip
sudo pip install requests
```

You might be prompted to upgrade pip as well:

```
sudo pip install --upgrade pip
```

Pull down the md380tools-vm scripts from github:

If you su'd to root user, exit now, back to your non-privileged user. (run the exit command or Ctrl+D)

Make sure you are in the user's home directory again with:

cd ~

Then, run these next three commands:

git clone https://github.com/KD4Z/md380tools-vm.git

mv .bash_aliases .bash_aliases.original

(Ignore the file not found message if you didn't have the aliases file already. This command will make a backup of your original, just in case you had something in there you want to keep)

cp md380tools-vm/root/.bash_aliases ~

(don't miss that last space and "tilda" at the end of the command above!) Note, this will overwrite your existing .bash_aliases file. Now, we need to verify that the .bash_aliases script will get run from .bashrc
With your favorite text editor (vi or nano for example), open the .bashrc file. Scan down looking for an if [] construct like this:

```
if [ -f ~/.bash_aliases ]; then
  ~/.bash_aliases
fi
```

If you can't find it, scroll all the way to the bottom, and add all three lines into the .bashrc file. Be sure to enter it exactly as listed above, including the spaces and periods! Save your changes, and exit the editor.

Fedora note:

If you are using Fedora, you might need to create a small bash script to redirect the SHA256 calculations to a different binary file than normal. Fedora seems to have removed the "shasum" program, and replaced it with multiple versions that calculate different size SHA hashes.

Run this to check to see if you have (or are missing) the *shasum* binary file.

ls /usr/bin/shasum

If you see a message "no such file or directory", then you need to follow these next simple steps to create a bash script replacement for the missing file. Otherwise, if you have the shasum binary file, skip to "Ready-Set-Go" section

You should also check to see if you have the sha256sum binary, as you will need it to be present!

ls /usr/bin/sha256sum

Hopefully, you will see a listing returned for this file.

As root user, use your favorite text editor, create a file named /usr/bin/shasum
You can use *sudo nano* or *sudo vi* for this. Add these two lines in the file and save it.

```
#!/usr/bin/bash
/usr/bin/sha256sum $3
```

You will need to set this new file to be executable with this:

```
sudo chmod +x /usr/bin/shasum
```

That should now allow the md380tools scripts to run on Fedora. That bash script becomes a replacement for the missing shasum binary, and just redirects it to the newer sha256sum program.

One more thing! The current instructions for installing md380tools on Fedora are missing something quite basic! It appears that Fedora 26 (the current version as of this document) does not have Python installed by default. You will need to install Python too!

sudo dnf install python

Ready-Set-Go

Logout of your terminal by running the exit command.

exit

Login again or open a terminal window again.

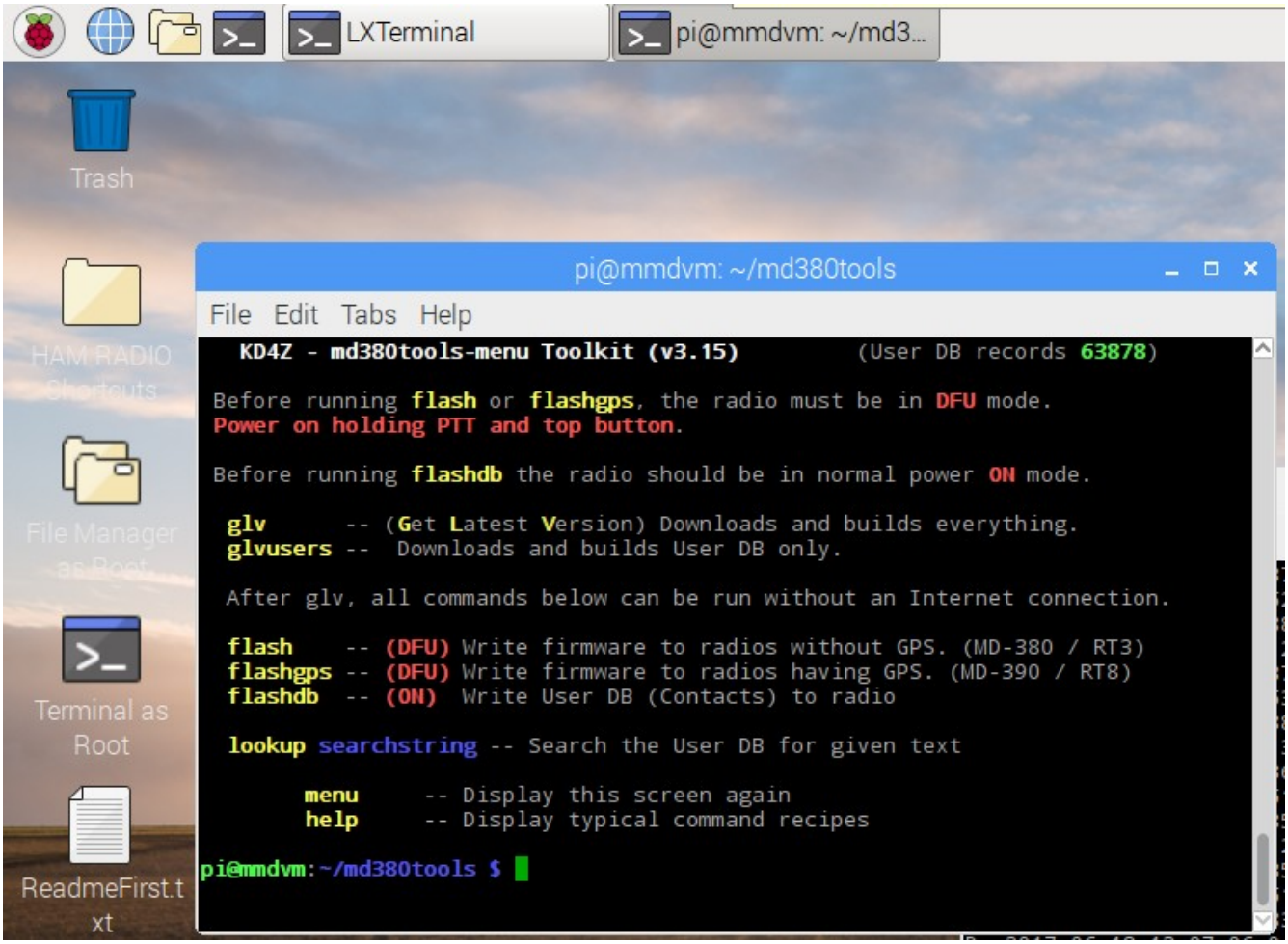
Run the main glv command in the KD4Z Toolkit:

glv

You see a lot of scripts running and source code flying by! When all of that is done, you will be left back at the linux prompt. Remember, to display the menu again, at anytime, run:

menu

You should see this screen.



In this example, I installed the KD4Z Toolkit scripting in Russell's excellent KB5RAB MMDVMHost raspberry Pi image. He already had the stock md380tools installed, but I wanted to have full use of the KD4Z Toolkit as well. The commands are exactly as described in the installation documentation for the KD4Z/md380tools-vm project found here:

https://github.com/KD4Z/md380tools-vm

If you want to have the menu automatically display when the terminal window is opened, you can add this line at the end of your .bashrc script using your favorite editor. Don't miss the dot at the beginning of the filename. If you have nano: (or use vi if you prefer)

nano .bashrc

Go all the way down to the end of the script, and add this line:

~/md380tools-vm/menuopts

Then save and exit with Control+X, press y, then press Enter. If you want to start with a fresh terminal window, just run the *clear* command to clear the Toolkit menu out of the way. Don't forget, you are always at the linux prompt, you can type any of the Toolkit commands or (linux commands), no matter what is on the screen.

Enjoy.

73 de KD4Z
Warren Merkel

revision 1.0 3 February 2017
revision 1.1 18 June 2017
revision 1.2 27 July 2017
revision 1.3 13 March 2018 - added steps to install pip and python request