



Learning Linux

Creating a Fedora Remix

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Fedora Remix Creation Quickstart

This quickstart will provide a quick method to download a pre-built Fedora Remix as well as creating your own Fedora Remix Building system. The https://github.com/tmichett/Fedora_Remix has been created with Ansible playbooks that will setup a Fedora Remix Building system using the Fedora Remix installed from the liveCD provided (https://drive.google.com/drive/folders/1UAT07AJIrTdMk3ke_QE6S6vz-qn6qGtR). The requirements are relatively simply to build and the system has Fedora Remix customization scripts and self-launching menu to assist with the initial setup. The quickstart and documentation are also available at the following link: https://tmichett.github.io/Fedora_Remix/.

Building your own Fedora Remix - Overview

1. Download the Fedora Remix ISO and install locally to hard drive
 - a. Setup a local user and ensure it is in the SUDOERS file
 - b. Run some the Fedora Remix customize scripts to create SSH keys and SUDO with no password
2. Clone https://github.com/tmichett/Fedora_Remix
3. Run the Ansible playbooks with the "sudo" command
 - a. Prepare_Web_Files.yml
 - b. Prepare_Fedora_Remix_Build.yml
4. Modify the Kickstart files in **/livecd-creator/FedoraRemix**
 - a. FedoraRemix.ks - To control various setup components and run commands
 - b. FedoraRemixPackages.ks - To control RPM packages that are installed as part of your Remix
5. Run the **Remix_Build_Script.sh**

Quickstart

This quickstart provides detailed information on how to download, install, and create your custom Fedora Remix. It depends first on having the Fedora Remix installed locally and access to the Github repository and playbooks contained withing the repository.

1. Download the "Latest" FedoraRemix LiveISO and create a bootable USB disk.
 - https://drive.google.com/drive/folders/1UAT07AJIrTdMk3ke_QE6S6vz-qn6qGtR
 - Use Balena Etcher or Fedora Media Writer to create the bootable USB device for installation on a physical machine.
 - Attach the ISO image to your virtual machine and select it as the boot device so it can be installed
2. Insert the disk into a computer or connect to the virtual machine and select

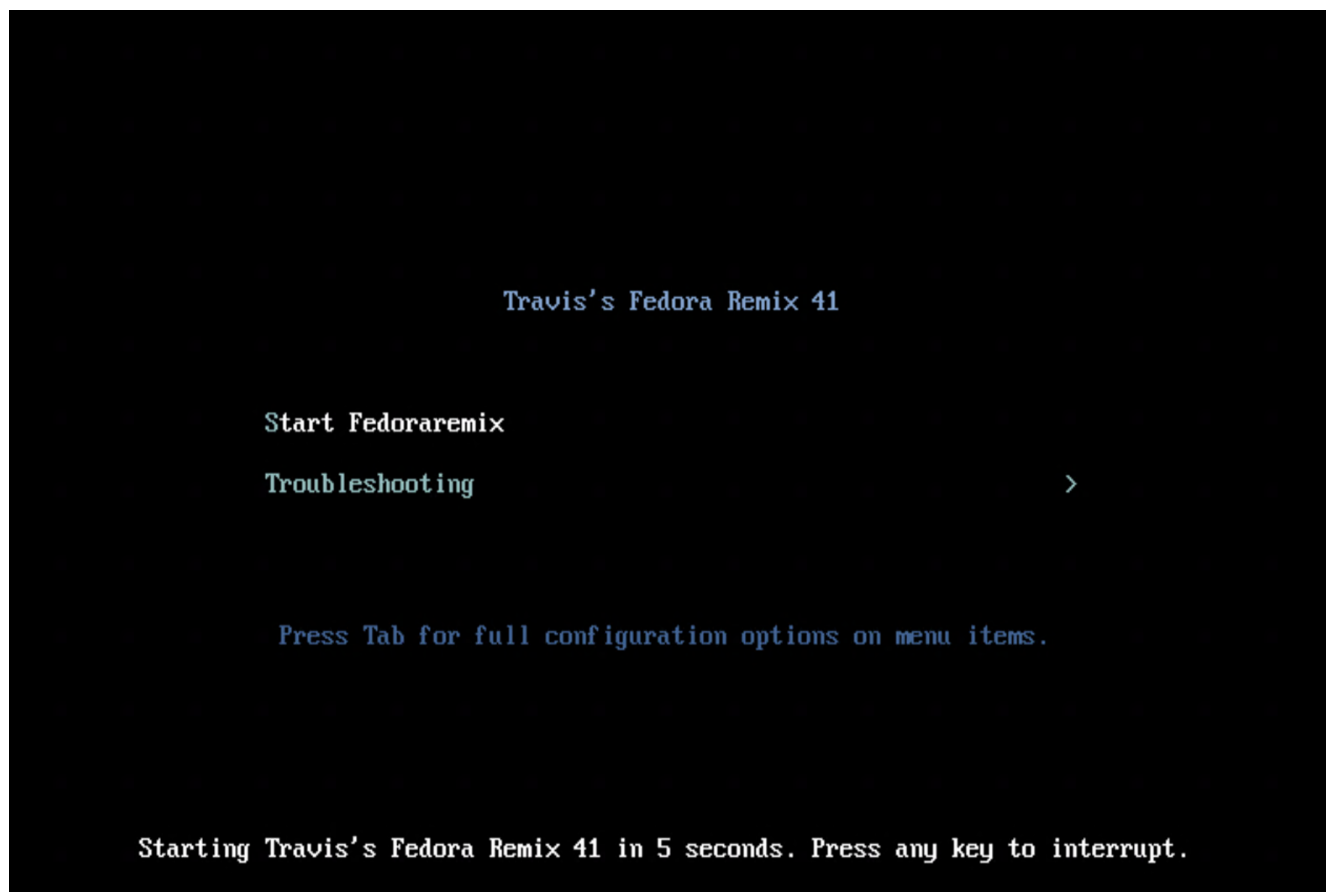


Figure 1. GRUB Boot Menu

3. Select "Start Fedoraremix" and hit Enter
4. Once booted to the main screen, click on the icon in the top left beside of "Apps" to bring up the application dock. Select the icon from the dock

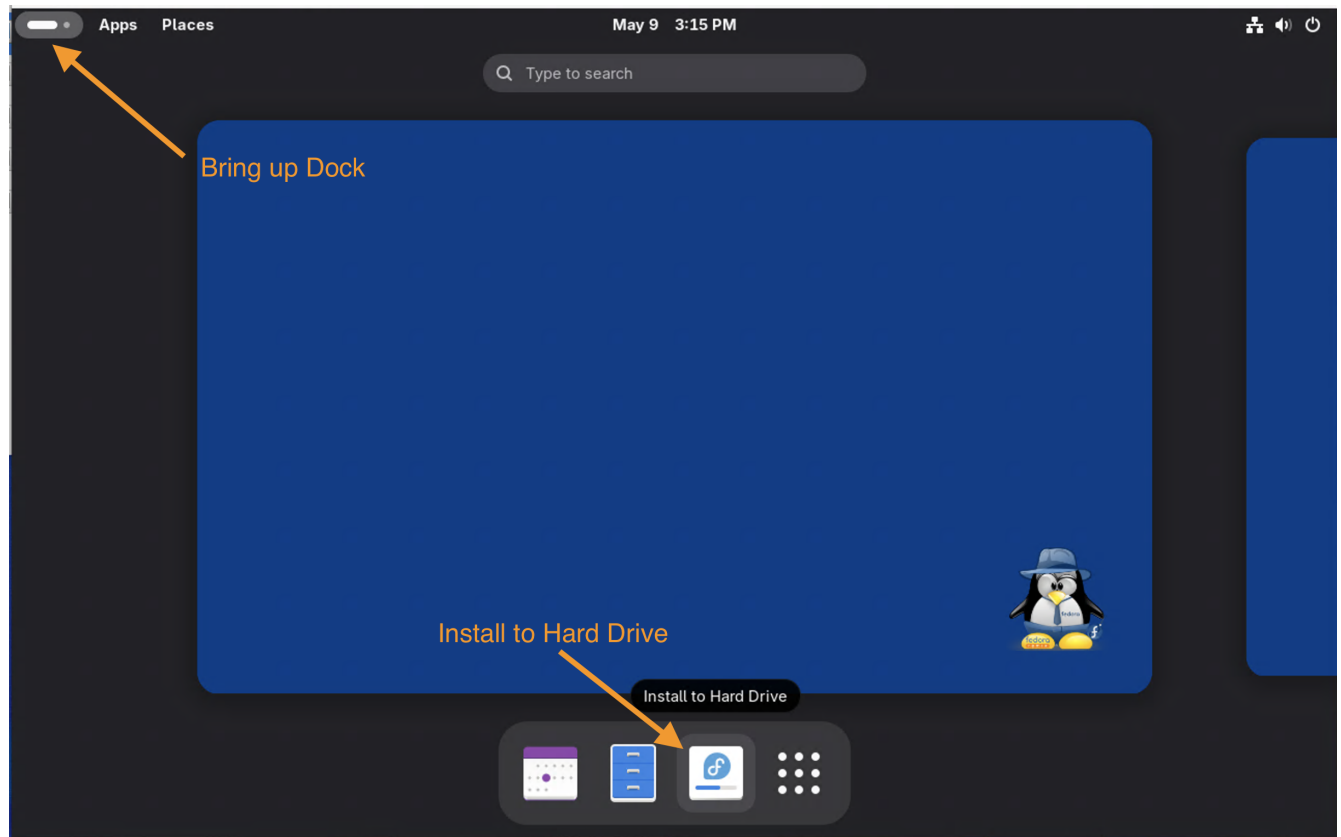


Figure 2. Fedora Remix LiveCD Desktop

5. The Anaconda graphical installer will appear. Select your desired language and optionally select the keyboard layout.

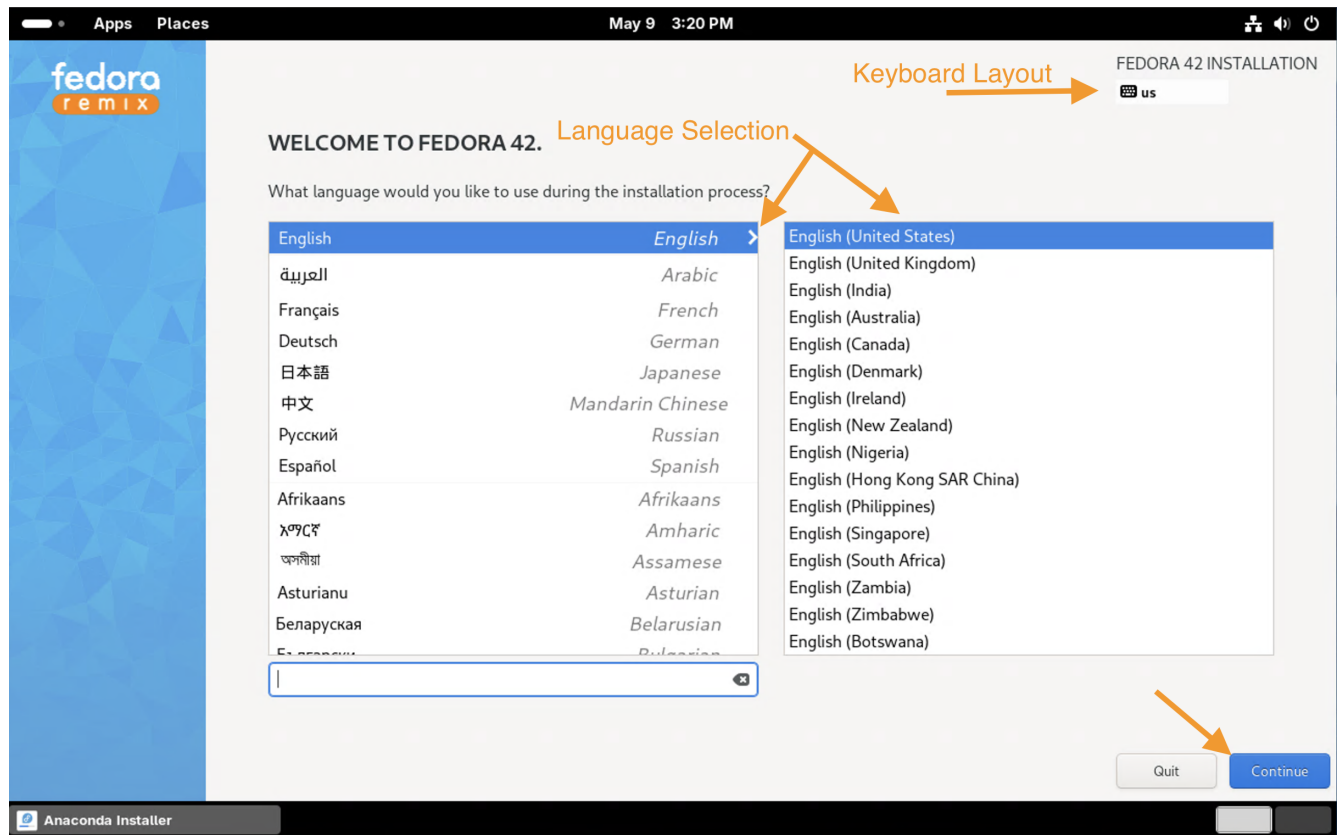


Figure 3. Anaconda Installer - Language and Keyboard

6. Complete the required and optional installation components.

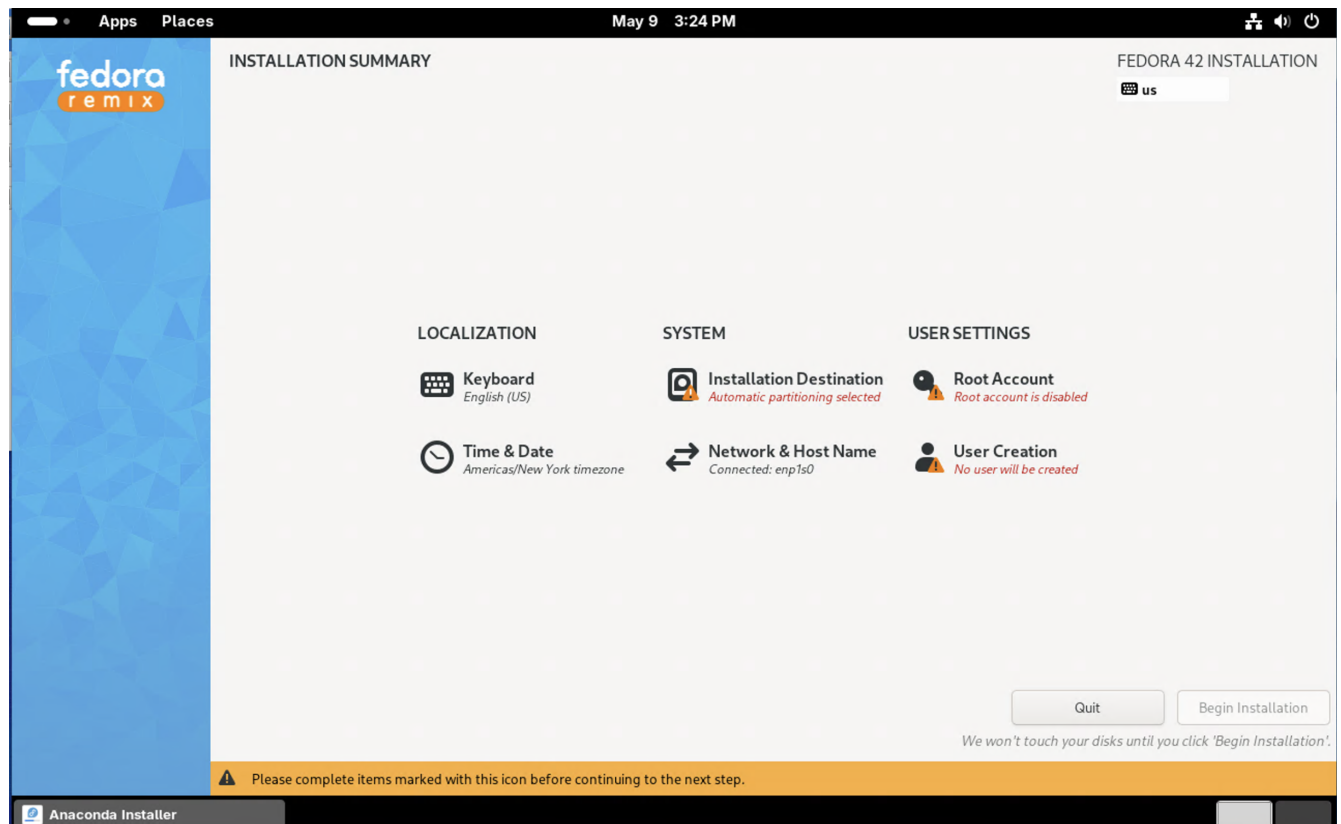


Figure 4. Anaconda Installer - Installation Summary

- a. Select "Installation Destination" and choose an appropriate installation device.

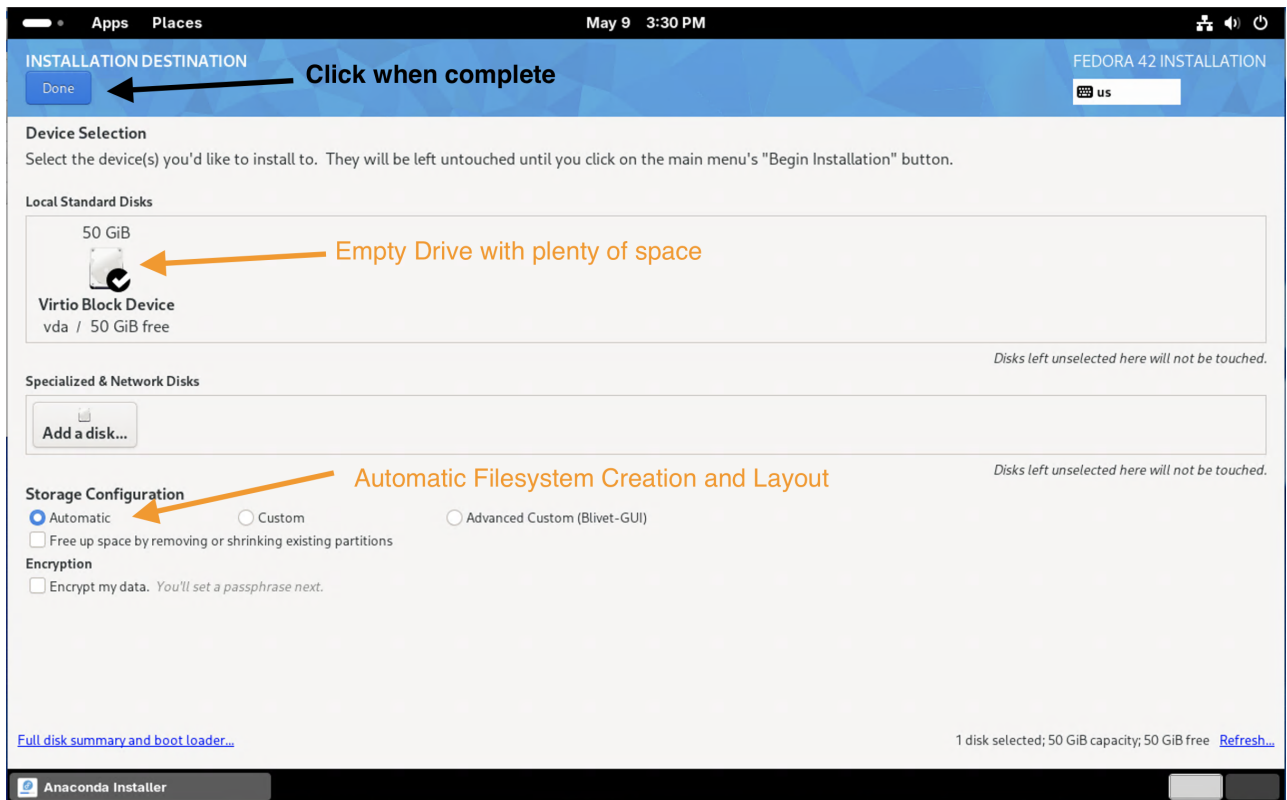


Figure 5. Setting Installation Location

- b. Create a user account by clicking "User Creation". Complete the required information and then click done.

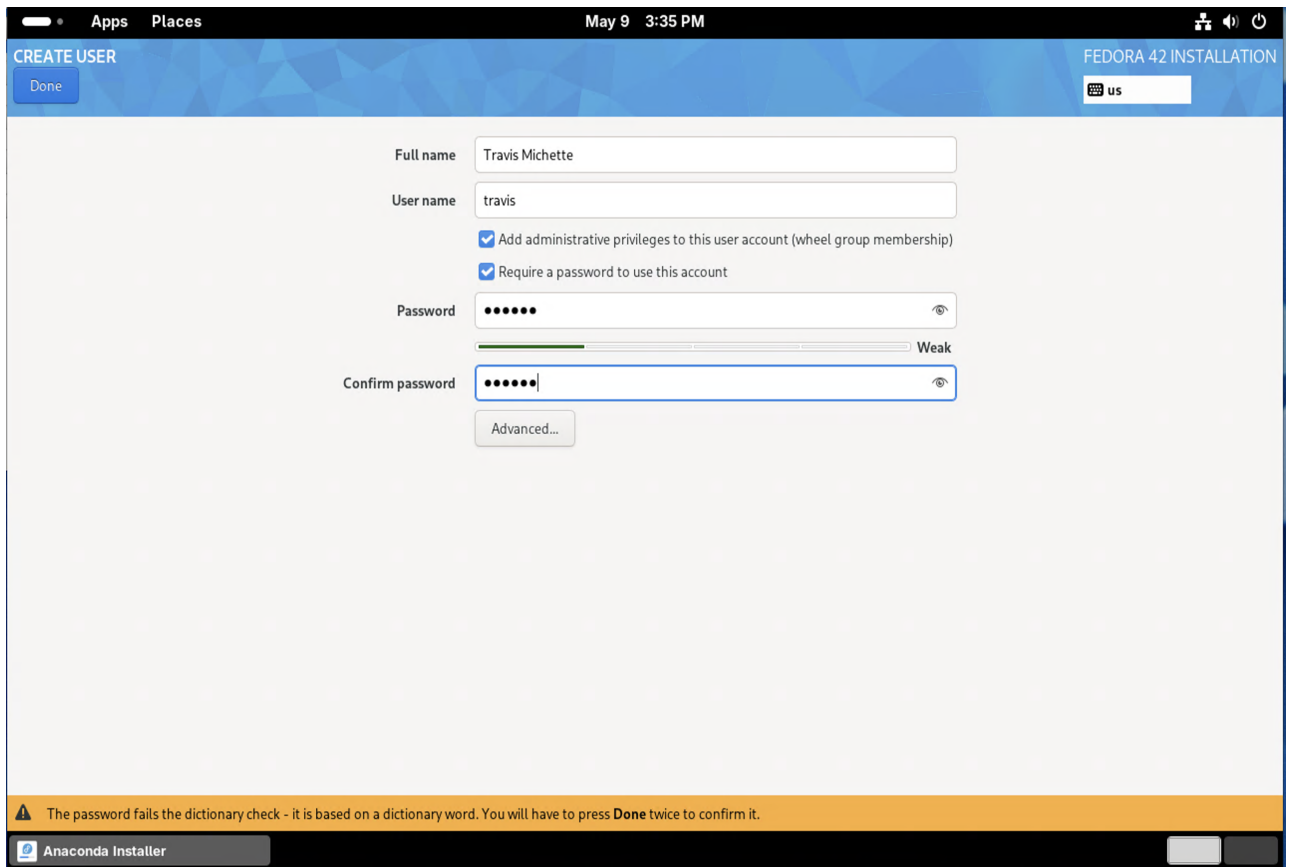


Figure 6. User Creation



Root Account

After you have specified the installation location and an initial user, you may proceed with the installation. Creating and enabling the **root** user is optional and not required. If you create the root user, likewise, you are not required to create a regular user account.



Setup Complete

After the installation is completed, you will need to reboot your system and perform package updates and any other needed tasks.

7. Clone the Fedora Remix Repository

```
travis@localhost-fedoraremix-live [~] | (05/09/25 @ 15:55)
$ git clone https://github.com/tmichett/Fedora_Remix.git
Cloning into 'Fedora_Remix'...
remote: Enumerating objects: 1949, done

... OUTPUT OMITTED ...

Resolving deltas: 100% (1042/1042), done.
```


8. Prepare the Fedora Remix build environment by running the Python scripts from the **Ansible** directory as the root user.

Listing 1. Create /livecd-creator/FedoraRemix Assets

```
travis@localhost-fedoraremix-live [~/Fedora_Remix/Ansible] | (05/09/25 @ 15:57) |
main ✓ |
$ sudo python Prepare_Fedora_Remix_Build.py

... OUTPUT OMITTED ...

Copying ../Remix_Buid_Script.sh to /livecd-creator/FedoraRemix/Remix_Buid_Script.sh
Setup complete!
```

Listing 2. Create httpd server and repository assets

```
travis@localhost-fedoraremix-live [~/Fedora_Remix/Ansible] | (05/09/25 @ 15:59) |
main ✓ |
$ sudo python Prepare_Web_Files.py
Installing packages: httpd
Running command: dnf install -y httpd

... OUTPUT OMITTED ...

Setup complete!
```

9. Perform System and Package customizations by modifying the **FedoraRemix.ks** kickstart file and the **FedoraRemixPackages.ks** file.
 - a. The setup scripts or playbooks created **/livecd-creator/FedoraRemix** directory. This is where the kickstart files live that you will modify as well as the directory where the FedoraRemix.iso will reside once built.

Listing 3. FedoraRemix.ks

```
... OUTPUT OMITTED ...

## Add Fedora Dynamic MotD Script
cd /usr/bin
wget http://localhost/files/fedora-dynamic-motd.sh
chmod +x /usr/bin/fedora-dynamic-motd.sh
echo /usr/bin/fedora-dynamic-motd.sh >> /etc/profile

## Customize BASH Prompts and Shell
mkdir /opt/bash
cd /opt/bash
```

```
wget http://localhost/files/bashrc.append
## Install Gitprompt
git clone https://github.com/tmichett/bash-git-prompt.git /opt/bash-git-prompt
--depth=1

... OUTPUT OMITTED ...
```

Listing 4. FedoraPackages.ks

```
... OUTPUT OMITTED ...

## Image Editing and Manipulation
inkscape
gimp
krita
netpbm-progs
scribus

## Video Editing and Manipulation
kdenlive

## Container Tools
buildah
skopeo
podman-machine

... OUTPUT OMITTED ...
```

10. Execute the **Remix_Build_Script.sh** file to kick off the build. Depending on system and Internet connection speed and customizations to the kickstart file, this process could take up to an hour.

Listing 5. Launching the Script

```
travis@localhost-fedoraremix-live [/lived-creator/FedoraRemix] | (05/09/25 @ 16:09)
$ time ./Remix_Build_Script.sh
/usr/lib/python3.13/site-packages/pykickstart/commands/partition.py:461:
KickstartParseWarning: A partition with the mountpoint / has already been defined.
  warnings.warn(_("A partition with the mountpoint %s has already been defined.") %
pd.mountpoint, KickstartParseWarning)
fedora                19 MB/s | 35 MB      00:01
updates              3.8 MB/s | 5.8 MB      00:01
google-chrome         7.5 kB/s | 1.9 kB      00:00

... OUTPUT OMITTED ...

Pass 4: Checking reference counts
```

```

Pass 5: Checking group summary information
_FedoraRemix: 371986/1324512 files (0.2% non-contiguous), 4248977/5294080 blocks

e2fsck 1.47.1 (20-May-2024)

0

real    34m41.254s
user    143m42.195s
sys     5m11.054s

```

Error Regarding kickstart.py

With newer Fedora releases, there is an error with the **kickstart.py** package and URLGrabber. Located on the "FedoraRemixTools" application, I've included a button to "FIX" the issue with the **kickstart.py** package. After completing the fix, you will no longer get the issue.

Listing 6. Python kickstart.py Errors

```
Traceback (most recent call last):
  File "/usr/sbin/livecd-creator", line 265, in <module>
    sys.exit(main())
    ~~~~~^^
  File "/usr/sbin/livecd-creator", line 195, in main
    ks = imgcreate.read_kickstart(options.kscfg)
  File "/usr/lib/python3.13/site-packages/imgcreate/kickstart.py", line
54, in read_kickstart
    ksfile = urlgrabber.urlgrab(path, filename=tmpks)
  File "/usr/lib/python3.13/site-packages/urlgrabber/grabber.py", line
808, in urlgrab
    return default_grabber.urlgrab(url, filename, **kwargs)
           ~~~~~~~~~~~~~~~~~~~~~~^AAAAAAAAAAAAAAAAAAAAAAAAAAAAA
  File "/usr/lib/python3.13/site-packages/urlgrabber/grabber.py", line
1205, in urlgrab
    (url,parts) = opts.urlparser.parse(url, opts)
                  ~~~~~^AAAAAAAAAAAAAA
  File "/usr/lib/python3.13/site-packages/urlgrabber/grabber.py", line
873, in parse
    pathname = pathname2url(url)
  File "/usr/lib64/python3.13/urllib/request.py", line 1679, in
pathname2url
    return quote(pathname, encoding=encoding, errors=errors)
  File "/usr/lib64/python3.13/urllib/parse.py", line 924, in quote
    raise TypeError("quote() doesn't support 'encoding' for bytes")
TypeError: quote() doesn't support 'encoding' for bytes
```



1. Preparing a Build System

1.1. Getting Started

Section Info Here

Initial Configuration

- **User for Ansible:** ansible
- **Password for Ansible User:** ansiblepassword
- User in sudoers.d file to become root without prompting for password

Listing 7. /etc/sudoers.d/ansible File

1.1.1. Preparing Environment

In order to prepare the environment, you will need a system running with Fedora already installed from the LiveCD and it will also need to have sufficient disk space to download REPO files, create the repository, and house the DVD ISO that is being created.

Required Items for Build Environment

- Same version of Fedora as Remix
- Same system architecture as Remix
- SELinux in **permissive** Mode
- Packages
 - livecd-tools
 - spin-kickstarts
- Lots of disk space

Default Kickstart files

The default kickstart files are installed in `/usr/share/spin-kickstarts`.

Listing 8. Initial Kickstart Files



fedora-cinnamon-common.ks	fedora-live-kde-base.ks
fedora-cloud-base-gcp.ks	fedora-live-kde.ks
fedora-cloud-base.ks	fedora-live-lxde.ks
fedora-cloud-base-vagrant.ks	fedora-live-lxqt.ks
fedora-comp-neuro-common.ks	fedora-live-mate_compiz.ks
fedora-container-base.ks	fedora-live-minimization.ks

```

fedora-container-base-minimal.ks  fedora-live-python-classroom.ks
fedora-container-common.ks        fedora-live-robotics.ks
fedora-design-suite-common.ks     fedora-live-scientific_kde.ks
fedora-disk-base.ks               fedora-live-security.ks
fedora-disk-kde.ks                fedora-live-soas.ks
fedora-disk-minimal.ks            fedora-live-workstation.ks
fedora-disk-python-classroom.ks   fedora-live-xfce.ks
fedora-disk-server.ks             fedora-lxde-common.ks
fedora-disk-soas.ks               fedora-lxqt-common.ks
fedora-disk-workstation.ks        fedora-mate-common.ks
fedora-disk-xbase.ks              fedora-minimal-common.ks
fedora-disk-xfce.ks               fedora-modular-arm-server.ks
fedora-eln-container-base.ks      fedora-modular-disk-minimal.ks
fedora-eln-guest.ks               fedora-neuro-gnome-common.ks
fedora-i3-common.ks               fedora-python-classroom-common.ks
fedora-iot.ks                     fedora-python-classroom-gnome-common.ks
fedora-kde-common.ks              fedora-python-classroom-vagrant.ks
fedora-kde-minimization.ks        fedora-repo.ks
fedora-live-astronomy_kde.ks      fedora-repo-not-rawhide.ks
fedora-live-base.ks               fedora-repo-rawhide.ks
fedora-live-cinnamon.ks           fedora-scientific-common.ks
fedora-live-comp_neuro.ks         fedora-scientific-vagrant.ks
fedora-live-design_suite.ks       fedora-soas-common.ks
fedora-live-games.ks              fedora-workstation-common.ks
fedora-live-i3.ks                 fedora-xfce-common.ks
fedora-live-jam_kde.ks            snippets

```

The one Fedora starts with is **fedora-live-base.ks**.

1.1.2. Create Build and Package Cache Directories and Copy Kickstarts

A build and cache directory should be created and you should copy kickstart files to your build directory.

Listing 9. Create Build Directory

```
mkdir -p /livecd-creator/{FedoraRemix,package-cache}
```

Listing 10. Copy the Base KS and the Desired Custom KS to the FedoraRemix directory

```

cp /usr/share/spin-kickstarts/fedora-live-base.ks /livecd-creator/FedoraRemix/
cp /usr/share/spin-kickstarts/fedora-repo.ks /livecd-creator/FedoraRemix/
cp /usr/share/spin-kickstarts/fedora-workstation-common.ks /livecd-creator/FedoraRemix/

```

```
cp /usr/share/spin-kickstarts/fedora-repo-not-rawhide.ks /livecd-creator/FedoraRemix/
```

```
cp /usr/share/spin-kickstarts/fedora-live-workstation.ks /livecd-creator/FedoraRemix/FedoraRemix.ks
```



Customizing Repositories

Modify and update the * **with the correct repositories to use. Comment out the *RAWHIDE** and use the repos for the version of Fedora you are Remixing.

2. Preparing a Build System

2.1. Getting Started

2.1.1. Preparing Environment

Appendix A: Fedora Remix