Fedora Live

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What is Fedora Live?

Why Live Fedora?

- Portability of compact discs and flash drives makes life really easy. No need to worry about carrying a bulk.

- Cost Effective, as normally CD's cost $0.2 and flash drives $20, far less than any computer system. This typically has a potential to act as driving force in rural computing.

Fedora Live CD features

- Read-write rootfs so it's possible to install software while the livecd is running.

- Install to hard disk or usb drives.

- Use SELinux in enforcing mode and other security features by default.

- Stay as close to a normal desktop install wrt. Features.

- Ability to create normal CD-ROM and CD-R media (less than 700MB) or DVD images.

Fedora Live CD features

- Included best of breed software on the media.

- Make it easy to do a derived livecd with your own repositories, packages and art work.

- Data persistence.

- API used by LTSP, appliance creator and others, especially Live Spins (spins.fedoraproject.org)

Create a Live CD

Install livecd-creator

To create a live CD, the livecd-creator tool is used. Super user privileges are needed. The tool is more or less self-documenting, the --help option can be used to see options.

It can be installed as follows:

```
# yum install livecd-tools
```

How livecd-creator works?

- Sets up a file for the ext3 file system that will contain all the data comprising the live CD.

- Loopback mounts that file into the file system so there is an installation root.

- Bind mounts certain kernel file systems (/dev, /dev/pts, /proc, /sys, /selinux) inside the installation root.

- Uses a configuration file to define the requested packages and default configuration options.

How livecd-creator works?

- Installs, using yum, the requested packages into the installation & run scripts as specified.

- Relabels the entire installation root (for SELinux).

- Creates a live CD specific initramfs that matches the installed kernel.

- Unmounts the installation root

How livecd-creator works?

- Creates a squashfs file system containing only the ext3 file (compression).

- Configures the boot loader.

- Creates an iso9660 bootable CD.

Example #1

- To create a basic bare-bones live cd we need to use the following:

```
# livecd-creator \
--config=/usr/share/livecd-tools/
livecd-fedora-minimal.ks
```

Example #2

- To create a desktop live cd or a custom spin we need to use the following:

```
# livecd-creator \
--config=/usr/share/livecd-
 tools/livecd-fedora-desktop.ks \
--fslabel=Fedora-LiveCD
```

Install/Test LiveCD

- To test livecd using qemu-kvm:

```
# qemu-kvm -m 512 -cdrom filename.iso
```

- To install the livecd on hard-disk which can also be done from an icon on desktop:

```
# /usr/bin/liveinst
```

Create a Live USB

Install the tools

To create a live CD, the livecd-iso-to-disk tool is used. Super user privileges are needed. This is also a part of livecd-tools

It can be installed as follows:

```
# yum install livecd-tools
```

Also, liveusb-creator can be installed from
http://fedorahosted.org/liveusb-creator

Live USB from ISO

- To create a live usb from a live cd iso we need to use the following:

```
# livecd-iso-to-disk Fedora-
<release>-Live-i686.iso /dev/sdb1
```

Live USB from Live CD

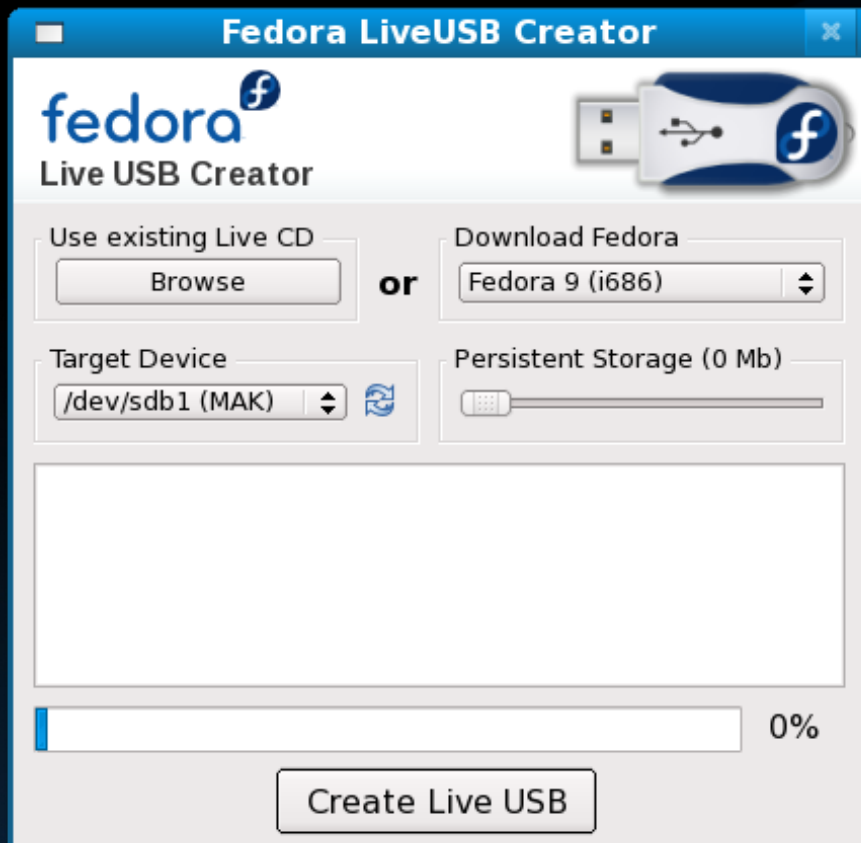- To create a live usb from a running live cd we need to use the following:

```
# livecd-iso-to-disk /dev/live
/path/tousbstick
```

Data Persistence

- Data persistence means that your files and settings will remain persistent even after you reboot your live system. To do this, take the live image and you can run the following command:

```
# livecd-iso-to-disk --overlay-size-mb 512 /path/to/iso /path/tousbstick
```

Use liveusb-creator

- Hassle free GUI built over command-line tools

- Works both in Fedora & Windows

- Currently in dev-state

Install/Test LiveUSB

- To test liveusb using qemu-kvm:

```
# qemu -hda /dev/sdb -m 256 -std-vga
```

- To install the liveusb on hard-disk which can also be done from an icon on desktop:

```
# /usr/bin/liveinst
```

@ *Errors & Solutions ?!?*

- Some of the older BIOS can't boot from a boot loader stored beyond first 1000 sectors. So, this also calls for partitioning flash drives using '*parted*'.

- For more probable errors and corresponding solutions, please check:

  http://fedoraproject.org/wiki/USBHowTo.html#Errors_and_Solutions

Space Constraints

- One of the important concern for LiveCD or Live spins is the 700 MB of space in CD-R/RW. So the size is to be limited in that amount of space.

- LiveUSB's however don' suffer from this problem. On the contrary, one of its' partitions can be used to store user's documents, spreadsheets, images etc.

Yay! You can contribute

- Finding the Code:

```
# git clone \
  git://git.fedoraproject.org/git/hosted/livecd
```

- Communicate:

  Fedora LiveCD list: *fedora-livecd-list@redhat.com*

  IRC Channel: *#fedora-devel @ irc.freenode.net*

Q/A

Contact: *makghosh@fedoraproject.org*