Fedora 19

Burning ISO images to disc

How to download ISO images and create CD and DVD media

Fedora Documentation Project

Abstract

How to download ISO images and create CD and DVD media

1. Introduction

The Fedora Project distributes Fedora in the form of *ISO image files* that you can download from the Internet. You can transfer, or *burn*, these ISO image files to a blank CD or DVD and then use this disc to install Fedora on a computer.

This document shows you how to download these image files and burn them to a disc using a few common tools. This document assumes that you have no experience with Linux.

Third-party software

The Fedora Project only supports software that is part of the Fedora distribution

Other software mentioned in this article is intended to guide you in the right direction. The Fedora Project is not responsible for nor endorses those software packages, and their use is described here merely for your convenience. This is not intended to be a comprehensive guide to burning ISOs under every operating system.

2. Downloading

2.1. Downloading an ISO Image

Several download options for Fedora ISOs are available from *http://fedoraproject.org/get-fedora*, including "spins" (special versions targeted at specific audiences) and versions for different processor types. Multiple download methods are available, including direct download from an official Fedora mirror, and torrents. Torrents download data from multiple peers, but require special software (for example *transmission* or *Ktorrent*).

The ISO files are large, so it might take a long time to download them, especially using a dial-up modem. If you have a slow connection to the Internet, consider using a download manager. Download managers typically enable you to pause and recommence the download at convenient times and to resume a download that was interrupted.

> Example 1. Resuming a download with **wget**
>
> The linux utility **wget** can resume interrupted downloads. A command such as the one below will download a Fedora image, and can be executed again to continue the download if needed.
>
> ```
>   wget --continue http://download.fedoraproject.org/pub/fedora/linux/releases/19/Fedora/
> x86_64/Fedora-19-x86_64-netinst.iso
> ```

2.2. Choosing the ISO Files

Fedora is distributed as a single DVD-sized ISO image file, smaller 1GB **spin** ISO image files, or as a **netinstall** image. Refer to the Fedora Live Images guide at *http://docs.fedoraproject.org* to learn more about spins.

Table 1. Comparing image types

Image type	Features
DVD image	Sized for 3.5 GB DVD media and 4 GB or larger USB media. Offers the most flexible installation options. Suited for customized installs, offline use, and low memory systems.
netinstall image	Sized for CD media and 512 MB or larger USB media. Offers flexible installation options, downloads latest packages during installation. Suited for customized installs, network deployment, and metered bandwidth connections.
Spin images	Sized for 1 GB USB media or larger optical media. Various spin images offer a live preview of the desktop environment they represent. They install only the features available from the spin, but can be added to after installation. Suitable for demonstrations or installing a specific desktop environment.

File size limits

A *file system* is a method that your computer uses to organize the files and data on its storage devices. Older file systems, notably FAT32, cannot handle large files like the DVD image. If downloading with such a system, you should choose a smaller image.

The exact files you need from the download server depend upon your system and the version of Fedora you are downloading. The file names will always contain **Fedora**, the release version, the image's target architecture, and the type of image.

Example 2. Filenames

Default live image

```
Fedora-Live-Desktop-x86_64-19-1.iso
```

32-bit KDE Spin

```
Fedora-Live-Desktop-i686-19-1.iso
```

64-bit netinstall image

```
Fedora-19-x86_64-netinst.iso
```

The computer processor architecture is usually `i386` for 32-bit PCs, including the Pentium and Athlon processor families. The architecture is usually `x86_64` for 64-bit PCs, including the Athlon 64 processor family. The architecture is usually `ppc` for PowerPC computers, including most of Apple's Macintosh offerings before they began using Intel chips in the MacBook. If in doubt, your system probably requires the `x86_64` versions.

For example, if downloading Fedora 19 for a Pentium 4 computer, the correct file is **Fedora-19-i386-DVD.iso**. You may also need the **CHECKSUM** file to verify that the files you have downloaded are complete and correct.

3. Validating the Files

Errors can occur during the download, even if your download manager reports none. Therefore it is **very important** to check that the files have not been corrupted in any way. This is the purpose of the **CHECKSUM** file. It contains one line for each of the available ISO files with a content verification code, called a *hash*, computed from the original ISO files.

BitTorrent Automatic Error Checking

BitTorrent automatically performs this error checking during downloads. If your **BitTorrent** application reports all files have been successfully downloaded, you can safely skip this step.

Third-party software

The Fedora Project and Red Hat, Inc. have no control over external sites such as the ones listed in the sections below, or the programs they provide.

3.1. Getting the CHECKSUM Files

Before getting started, it's a good time to download the checksums from *http://fedoraproject.org/verify*. Click on the link that matches the ISO you have downloaded and keep it handy for the next steps.

3.2. Validating in the Windows Graphical Environment

There are a number of no-cost products available for file validation and hashing that have point and click interfaces. Here are links to a few of them:

- HashTab: *http://implbits.com/HashTab/HashTabWindows.aspx*

- DivHasher: *http://soft.mydiv.net/DivHasher.html*

- MD5 GUI: *http://www.toast442.org/md5/*

Follow the instructions provided to install the program. When you run the program, use the file selection tools provided to select your downloaded ISO image files. Then select the SHA256 algorithm for calculation, and run the tool. The program takes some time to complete, since it must read the entire ISO file.

If you are using HashTab, you will need to enable the SHA256 checksum option. In order to do this open the File Properties window (right click --> File Hashes tab --> Settings), then select the SHA256 option. It is advisable to uncheck any preselected hash options as they will only slow down the hash calculations.

Open the file **CHECKSUM** with a text editor, such as **Notepad**, to display its contents. Make sure the hash displayed by the hash tool for **each** of the downloaded ISO files **exactly** matches the corresponding hash in the **CHECKSUM** file.

If all of the hashes match, you can burn the ISO file to disc. If a file does not match, download it again.

3.3. Validating at the Windows Command Prompt

To check the files using the command prompt, download the program **sha256sum.exe** available from *http://www.labtestproject.com/files/win/sha256sum/sha256sum.exe*. If you have any problems accessing **sha256sum.exe**, you can try to grab **md5sum.exe** from *http://etree.org/software.html*. If you have downloaded **md5sum.exe** be sure to substitute for the correct tool below.

The **sha256sum.exe** program computes and displays hashes. To use it, save **sha256sum.exe** to the same directory as the ISO files. Select **Run...** from the Start menu and then enter **cmd** for the name of the program to start a **Command Prompt** window. Then change into the download directory. Run **sha256sum** with each ISO file like this:

```
cd "C:\Documents and Settings\Owner\My Documents\My Downloads\Fedora"
sha256sum.exe Fedora-19-i386-DVD.iso
```

The program takes some time to complete, since it must read the entire ISO file.

Open the file **CHECKSUM** with a text editor, such as **Notepad**, to display its contents. Make sure the hash displayed by **sha256sum.exe** for **each** of the downloaded ISO files **exactly** matches the corresponding hash in the **CHECKSUM** file.

If all of the hashes match, you can burn the ISO file to disc. If a file does not match, download it again.

3.4. Validating in Mac OS X

To check the files, download the program **HashTab** available from *http://beeblebrox.org/*.

Drag each Fedora image file that you want to validate, and drop it onto **HashTab**. Take note of the SHA256 value that **HashTab** displays.

Open the file **CHECKSUM** with a text editor, such as **TextEdit**, to display its contents. Make sure the hash displayed by **HashTab** for **each** of the downloaded ISO files **exactly** matches the corresponding hash in the **CHECKSUM** file.

To validate the files from the command line, use the **shasum** command. In order to correctly validate the files, the 256-bit algorithm must be specified. Change into the directory that holds the ISO image files, then run **shasum**. For example:

```
cd Desktop
shasum -a 256 Fedora-19-i386-DVD.iso
```

If all of the hashes match, you can burn the ISO file to disc. If a file does not match, download it again.

3.5. Validating in Linux

Open a *terminal emulator*:

- on the GNOME desktop, click **Applications** → **System Tools** → **Terminal** to open **GNOME Terminal**

- on the KDE desktop, click **Kickoff Application Launcher** → **Applications** → **System** → **Terminal** to open **Konsole**

Change into the directory that holds the ISO image files, then run **sha256sum**, for example:

```
$ cd Downloads
$ sha256sum Fedora-19-i386-DVD.iso
```

Open the file **CHECKSUM** with a text editor, such as **gedit** or **kwrite**, to display its contents. Make sure the hash displayed by **sha256sum** for **each** of the downloaded ISO files **exactly** matches the corresponding hash in the **CHECKSUM** file.

If all of the hashes match the hashes found at *http://fedoraproject.org/verify*, you can burn the ISO file to disc. If a file does not match, download it again.

4. Burning

The process of burning ISO images to disc varies according to your operating system and the software that you have available. This section provides a guide to some popular disc burning tools.

If you are burning a set of Fedora CDs, you can test that you are burning the discs correctly and that your computer can boot from these discs as soon as you have burnt the first disc in the set. Refer to *Section 6, "Next steps"* to learn how to start your computer from a Fedora disc. If you press **Enter** on the Fedora boot screen, the Fedora installer will offer you a chance to test the disc. If you discover a problem with the first disc before you burn an entire set, you could save time and discs. Note that the disc test option is available when you boot from a Fedora DVD, or CDROM#1 from a Fedora CD set, but *not* when you boot from a Fedora Live CD.

If you are burning CDs, the steps below will need to be repeated for each CD in the set. It may be helpful to label the CDs with the number after each one completes.

4.1. Burning discs under Windows operating systems

4.1.1. Burning discs with Windows 7

1. Insert a blank, writable disc.

2. Right-click the ISO image file and select **Burn disc image**.

3. In the **Windows Disc Image Burner** window, check that the correct drive is identified in the **Disc burner** drop-down menu, then click **Burn**.

4.1.2. Burning discs with older Windows operating systems

The CD burning feature built into Windows XP and Windows Vista cannot burn CDs from images and Windows operating systems before Windows XP did not have any built-in CD burning capability at all. Therefore, to turn an ISO image files into a CD or DVD on Windows operating systems prior to Windows 7, you need separate disc burning software that can handle ISO image files.

Examples of popular CD burning software for Windows that you might already have on your computer include **InfraRecorder**, **Nero Burning ROM**, and **Roxio Creator**. If you use a Windows operating system on your computer and do not have disc burning software installed (or you are not sure that the software can burn discs from image files) **InfraRecorder** is a suitable solution available from *http://www.infrarecorder.org/*, and is free and open-source.

The steps required to burn ISO images to disks with several popular CD burning applications are listed below.

4.1.2.1. Using InfraRecorder

Obtain and install **InfraRecorder** from the *http://infrarecorder.org* web site.

1. Start **InfraRecorder**.

2. Select **Actions**.

3. Select **Burn Image**.

4. Choose the Fedora ISO file and select **open**.

5. Select **4X** as the write speed.

6. Select **OK**.

4.1.2.2. Using The ISO Recorder V2 Power Toy

Obtain and install the ISO Recorder power toy from the *http://isorecorder.alexfeinman.com/isorecorder.htm* web site.

1. In the file manager **Explorer**, right click on the first Fedora ISO file.

2. In the context menu, select **Copy image to CD**.

3. Follow the steps given by the **CD Recording Wizard** pop-up.

4. Repeat for the remaining ISO files.

4.1.2.3. Using Roxio Easy Media Creator 7

1. Start **Creator Classic**.

2. Select **Other Tasks**.

3. Select **Burn from Disc Image File**.

4. Choose the Fedora ISO file and burn it.

4.1.2.4. Using Nero Burning ROM 5

1. Start the program.

2. Open the **File** menu.

3. Select **Burn Image**.

4. Choose the Fedora ISO file and burn it.

5. Repeat the above steps for each of the other ISO files.

4.1.2.5. Using Nero Express 6

1. Start the program.

2. Select **Disc Image or Saved Project**.

3. An **Open** dialog appears. Select the first Fedora ISO file. Click **Open**.

4. Set the writing speed for your disc recorder. The optimal setting depends on your specific hardware.

5. Click Next to burn.

6. Repeat the steps above for the other ISO files.

4.2. Burning discs under Mac OS X

1. Right or Control-click on the ISO file. A contextual menu appears.

2. Click **Open With** → **Disk Utility**.

3. In the **Disk Utility** window, click the ISO file, then click the **Burn** icon in the toolbar. A **Burn Disc In** sheet slides down from the toolbar.

4. Insert a blank, writable disc.

5. Click **Burn**. When burning is complete, your computer ejects the now ready-to-use disc.

4.3. Burning discs under Linux

4.3.1. Burning discs on the GNOME desktop

CD/DVD Creator is disc burning software integrated with the GNOME desktop.

1. Right-click on the ISO image file that you downloaded and select **Write to disk**. The **Write to Disc** dialog box appears.

2. Click the **Write** button. **CD/DVD Creator** prompts you to insert a disc, then burns the image file to the disc.

4.3.2. Burning discs with K3b

K3b is the default disc burning software for the KDE desktop.

1. Click **Kickoff Application Launcher** → **Applications** → **Multimedia** → **CD & DVD Burning** to launch **K3b**.

2. Click **Tools** → **Burn CD Image** to burn a CD, or **Tools** → **Burn DVD ISO Image** to burn a DVD. The **Burn CD Image** or **Burn Iso1660 Image to DVD** dialog box appears.

3. Use the button beside the **Image to burn** box to browse to the ISO image file.

4. Insert a blank disc, then click the **Start** button. **K3b** burns the image file to the disc.

4.3.3. Burning discs with Brasero

Brasero is disc burning software included with many Linux distributions, on a variety of desktops.

1. Launch **Brasero**.

2. Click **Burn image**.

3. Click **Click here to select a disc image** and browse to the ISO image file you downloaded.

4. Insert a blank disc, then click the **Burn** button. **Brasero** burns the image file to the disc.

4.3.4. Burning discs with wodim from the command line

wodim is a command line tool that makes burning iso files to disc easy. These instructions will help you to burn a disc when a Graphical User Interface is not available.

1. Install **wodim** with the command **su -c 'yum install wodim'**

2. Locate your cdrom drives location with **wodim --devices**. This should give something like the following:

```
[zoglesby@zlaptop ~]$ wodim --devices
wodim: Overview of accessible drives (1 found) :
-------------------------------------------------------------------------
0  dev='/dev/scd0' rwrw-- : 'TSSTcorp' 'DVD+-RW TS-T633C'
-------------------------------------------------------------------------
```

3. Using the output from above identify your drive location. In this example it would be /dev/scd0, and issue the following command to burn the cd.

   wodim -v *dev=/dev/xxx* speed=4 -eject */path/to/Fedora.iso*.

> ### Replace values
>
> Be sure to replace the `dev=/dev/xxx` with your drive path, and `/path/to/Fedora.iso` to the actual path and name of the ISO file.

5. Preparing a USB flash drive as an installation source

> ### Ensure your USB media has sufficient space
>
> Your USB media will need free space equal to the size of the ISO you obtained in *Section 2.2, "Choosing the ISO Files"*. For example, a 2.2GB DVD ISO will need 2.2GB of free space on the USB drive, but having slightly more free space on the drive is ideal.

> ### Unusual USB Media
>
> In a few cases with oddly formatted or partitioned USB media, image writing may fail.

5.1. Making Fedora USB Media on a Windows Operating System

> ### Note — This Method Is Not Destructive
>
> This method is not destructive, so existing data on the media is not harmed. Nevertheless, it is always a good idea to back up important data before performing sensitive disk operations.

The most straightforward way to place a Fedora image on USB media using a Windows operating system is to transfer the Fedora live image to the USB device with the **LiveUSB Creator** tool.

Note that the **dd** tool discussed in *Section 5.2, "Making Fedora USB Media in UNIX, Linux, and Similar Operating Systems"* is also available for Windows. Follow the instructions in that section to use an implementation of **dd** for Windows operating systems. The instructions in this section assume that you will use **LiveUSB Creator**.

1. Download the **LiveUSB Creator** program for Windows from *http://fedorahosted.org/liveusb-creator*.

2. **LiveUSB Creator** can create live USB media either from an image file that you downloaded previously, as described in *Section 2.2, "Choosing the ISO Files"*, or it can download an image file from the Internet. Either:

- click the **Browse** button under the **Use existing LiveCD** label, browse to the location where you previously downloaded a Fedora Live ISO file, and select that file.

- select a Fedora Live ISO file from the drop-down menu that **LiveUSB Creator** presents under the **Download Fedora** label. Note that image files are large and that it is probably impractical to use **LiveUSB Creator** to download an image file if you do not have a broadband connection to the Internet.

3. Click **Create Live USB**.

5.2. Making Fedora USB Media in UNIX, Linux, and Similar Operating Systems

A graphical tool is available to create Fedora USB media on systems that run Fedora or operating systems derived from Fedora. To create Fedora USB media on other UNIX or Linux operating systems (including Mac OS X), use the command-line method described in *Section 5.2.1.3, "Making Fedora USB Media with **dd**"*.

5.2.1. Creating Fedora USB Media in Fedora and similar Linux distributions

Graphical and command-line tools are available to create Fedora USB media on computers that run Fedora and Linux distributions derived from Fedora. The command line tools work with both Fedora DVD and live images, but the graphical tool works only with live images. To create Fedora USB media from the distribution image or minimal boot media image, use one of the command line methods described in *Section 5.2.1.2, "Making Fedora USB Media with **livecd-tools"*** and *Section 5.2.1.3, "Making Fedora USB Media with **dd**"*.

5.2.1.1. Making Fedora USB Media with a graphical tool

> ### Important — Enable Extra Packages for Enterprise Linux
>
> To perform this procedure on Linux distributions derived from Fedora, enable the *Extra Packages for Enterprise Linux* (EPEL) repository. Refer to *http://fedoraproject.org/wiki/EPEL/FAQ#howtouse* for instructions.

> ### Note — This Method Is Not Destructive
>
> This method is not destructive, so existing data on the media is not harmed. Nevertheless, it is always a good idea to back up important data before performing sensitive disk operations.

1. Install the *liveusb-creator* on your system with your graphical package manager, or the following command:

```
su -c 'yum -y install liveusb-creator'
```

2. Plug in your USB media.

3. Launch **LiveUSB Creator**, either from a menu or by entering `liveusb-creator` on the command line. Enter the root password for your system when **LiveUSB Creator** prompts you for it.

4. **LiveUSB Creator** can create live USB media either from an image file that you downloaded previously, as described in *Section 2.2, "Choosing the ISO Files"*, or it can download an image file from the Internet. Either:

    *   click the **Browse** button under the **Use existing LiveCD** label, browse to the location where you previously downloaded a Fedora Live ISO file, and select that file.

    *   select a Fedora Live ISO file from the drop-down menu that **LiveUSB Creator** presents under the **Download Fedora** label. Note that image files are large and that it is probably impractical to use **LiveUSB Creator** to download an image file if you do not have a broadband connection to the Internet.

5. Click **Create Live USB**.

5.2.1.2. Making Fedora USB Media with livecd-tools

Important — Enable Extra Packages for Enterprise Linux

To perform this procedure on Linux distributions derived from Fedora, enable the *Extra Packages for Enterprise Linux* (EPEL) repository. Refer to *http://fedoraproject.org/wiki/EPEL/FAQ#howtouse* for instructions.

Note — This Method Is Not Destructive

This method is not destructive, so existing data on the media is not harmed. Nevertheless, it is always a good idea to back up important data before performing sensitive disk operations.

1. Install the *livecd-tools* package on your system with your graphical package manager, or the following command:

    ```
    su -c 'yum -y install livecd-tools'
    ```

2. Plug in your USB media.

3. Find the device name for your USB media. If the media has a volume name, use it to look up the device name in **/dev/disk/by-label**, or use the **findfs**:

    ```
    su -c 'findfs LABEL="MyLabel"'
    ```

    If the media does not have a volume name, or you do not know it, consult the **/var/log/messages** log for details:

```
su -c 'less /var/log/messages'
```

4. Use the **livecd-iso-to-disk** command to write the ISO image to the media:

```
su -c 'livecd-iso-to-disk the_image.iso /dev/sdX1'
```

Replace *sdX1* with the device name for the partition on the USB media. Most flash drives and external hard disks use only one partition. If you have changed this behavior or have oddly partitioned media, you may need to consult other sources of help.

5.2.1.3. Making Fedora USB Media with dd

⚠ Warning — These instructions could destroy data

When you perform this procedure any data on the USB flash drive is destroyed with no warning. Make sure that you specify the correct USB flash drive, and make sure that this flash drive does not contain any data that you want to keep.

Note

The Fedora Project recommends using **livecd-tools** rather than **dd** for creating USB media whenever possible.

1. Plug in your USB flash drive.

2. Become root:

```
su -
```

3. Your flash drive must have a single partition with a vfat file system. To determine how it is formatted, find the name of this partition and the device itself by running **dmesg** shortly after connecting the drive. The device name (similar to **/dev/sdc**) and the partition name (similar to **/dev/sdc1**) both appear in several lines towards the end of the output.

4. Use the partition name to ensure that the file system type of the USB flash drive is vfat.

```
# blkid partition
```

You should now see a message similar to:

```
LABEL="LIVE" UUID="6676-27D3" TYPE="vfat"
```

If TYPE is anything other than vfat (for example, TYPE="iso9660"), clear the first blocks of the USB flash drive:

```
# dd if=/dev/zero of=partition bs=1M count=100
```

5. Use the **dd** command to transfer the boot ISO image to the USB device:

```
# dd if=path/image_name.iso of=device
```

where `path/image_name`.iso is the boot ISO image file that you downloaded and **device** is the device name for the USB flash drive. Ensure you specify the device name, not the partition name. For example:

```
# dd if=~/Download/Fedora-19-x86_64-DVD.iso of=/dev/sdc
```

5.2.2. Making Fedora USB Media in other Linux Distributions

To create Fedora USB media from a DVD or live image on a computer that uses a Linux distribution other than Fedora and those derived from Fedora, use one of the command-line procedures detailed in this section.

5.2.2.1. Making Fedora USB Media with livecd-tools

Note — This Method Is Not Destructive

This method is not destructive, so existing data on the media is not harmed. Nevertheless, it is always a good idea to back up important data before performing sensitive disk operations.

This method works only on Linux operating systems.

1. Download a DVD or live ISO image for Fedora as shown in *Section 2.2, "Choosing the ISO Files"*

2. Plug in your USB media.

3. Find the device name for your USB media. If the media has a volume name, look up the name in **/dev/disk/by-label**, or use the **findfs**:

```
su -c 'findfs LABEL="MyLabel"'
```

If the media does not have a volume name, or you do not know it, consult the **/var/log/ messages** log for details:

```
su -c 'less /var/log/messages'
```

4. Many Linux distributions automatically *mount* USB media devices when you connect the device to your computer. If this is the case, unmount the device. The specific method to do this varies widely between Linux distributions and desktops. Some common methods include:

    • select **File > Unmount** if the operating system presents you with a window that displays the contents of the device.

- right-click on an icon of the device and click **Unmount**.

- click on an icon that represents ejecting the media — commonly, an upward-pointing triangle.

5. At a command line, type **su -** to become root, and enter the root password when your system prompts you.

6. Create a *mount point* for the image that you downloaded. For example, to use **/tmp/livecd** as the mount point, type **mkdir /tmp/livecd** and press **Enter**.

7. Mount the image with the following command: **mount -o loop */path/to/image/file/ imagefile.iso /path/to/mount/point***, where */path/to/image/file* is the location of the image file that you downloaded, **imagefile.iso** is the image file, and */path/to/mount/ point* is the mount point that you just created.

8. Change directory to the **LiveOS** directory of the image that you just mounted. mount point where you just mounted the Fedora image. For example, **cd /tmp/livecd/LiveOS**.

9. Run the following command: **./livecd-iso-to-disk */path/to/image/file/ imagefile.iso device***, where */path/to/image/file* is the location of the image file that you downloaded, **imagefile.iso** is the image file, and *device* is the USB media device.

> Example 3. Mounting a Fedora live image file and using livecd-iso-to-disk to create live USB media
> You have downloaded a Fedora live image, **Fedora-19-i686-Live.iso**, to a folder named **Downloads** in your home directory. You have a USB flash drive plugged into your computer, named **/dev/sdc**, with a partition named **/dev/sdc1**
>
> Become root:
>
> ```
> su -
> ```
>
> Make a mount point for the image:
>
> ```
> mkdir /mnt/livecd
> ```
>
> Mount the image:
>
> ```
> mount -o loop /home/Username/Downloads/Fedora-19-i686-Live.iso /mnt/livecd
> ```
>
> Change into the **LiveOS** directory of the live CD image:
>
> ```
> cd /mnt/livecd/LiveOS
> ```
>
> Run **livecd-iso-to-disk** to transfer the live image to the partition on your flash drive and make the flash drive bootable:
>
> ```
> ./livecd-iso-to-disk /home/Username/Downloads/Fedora-19-i686-Live.iso /dev/sdc1
> ```

5.2.2.2. Making Fedora USB Media with dd

⚠ **Warning — These instructions could destroy data**

When you perform this procedure any data on the USB flash drive is destroyed with no warning. Make sure that you specify the correct USB flash drive, and make sure that this flash drive does not contain any data that you want to keep.

Note

The Fedora Project recommends using **livecd-tools** rather than **dd** for creating USB media whenever possible.

Use this method for the distribution image, the minimal boot media image, or on systems with a UNIX operating system (including Mac OX X).

1. Plug in your USB flash drive.

2. Become root:

    ```
    su -
    ```

3. Your flash drive must have a single partition with a vfat file system. To determine how it is formatted, find the name of this partition and the device itself by running **dmesg** shortly after connecting the drive. The device name (similar to **/dev/sdc**) and the partition name (similar to **/dev/sdc1**) both appear in several lines towards the end of the output.

4. Use the partition name to ensure that the file system type of the USB flash drive is vfat.

    ```
    # blkid partition
    ```

    You should now see a message similar to:

    ```
    LABEL="LIVE" UUID="6676-27D3" TYPE="vfat"
    ```

    If TYPE is anything other than vfat (for example, TYPE="iso9660"), clear the first blocks of the USB flash drive:

    ```
    # dd if=/dev/zero of=partition bs=1M count=100
    ```

5. Use the **dd** command to transfer the boot ISO image to the USB device:

    ```
    # dd if=path/image_name.iso of=device
    ```

where *path/image_name*.iso is the boot ISO image file that you downloaded and ***device*** is the device name for the USB flash drive. Ensure you specify the device name, not the partition name. For example:

```
# dd if=~/Download/Fedora-19-x86_64-DVD.iso of=/dev/sdc
```

6. Next steps

To boot your computer from the DVD, CD, or USB media that you have just produced:

1. Insert the disc or USB drive, then turn off your computer with the disc still in place.

2. Restart your computer. As the computer starts, watch for a message that tells you to press a certain key to choose a boot device. The key varies from computer to computer but, on many systems, the required key will be **F12**, **F2**, **F1**, **Esc**, or **Delete**. Press the required key and select the CD or DVD drive that contains your disc, or the USB drive.

   If your computer does not offer you a boot menu, and a Fedora boot screen does not appear shortly after the computer starts, you might need to change the computer's boot sequence in its BIOS. Refer to the documentation that came with your computer for instructions. The details of this procedure vary widely from computer to computer.

3. When the Fedora boot screen appears, you can proceed to install Fedora. Refer to the *Fedora 19 Installation Quick Start Guide* for basic instructions for most desktop and laptop computers, or the *Fedora 19 Installation Guide* for a full set of installation instructions. Both documents are available from *http://docs.fedoraproject.org*.

7. We Need Feedback!

If you find a typographical error in this manual, or if you have thought of a way to make this manual better, we would love to hear from you! Please submit a report in Bugzilla: *http://bugzilla.redhat.com/bugzilla/* against the product **Fedora Documentation.**

When submitting a bug report, be sure to mention the manual's identifier: *readme-burning-isos*

If you have a suggestion for improving the documentation, try to be as specific as possible when describing it. If you have found an error, please include the section number and some of the surrounding text so we can find it easily.

A. Revision History

Revision 19.1	**Sun Jul 7 2013**	**Pete Travis**
		immanetize AT fedoraproject.org

Updated content to reflect creation of USB media

Revision 19	**Wed Jul 3 2013**	**Pete Travis**
		immanetize AT fedoraproject.org

Updated content to reflect targeting of USB media sizes
Added a table for comparing image types.

Revision 17   **Mon May 28 2012**   **Ben Cotton** *bcotton@fedoraproject.org*

Update for Fedora 17
Added OS X CLI instructions
Corrected mis-formatted filenames

Revision   **Tue Jul 27 2010**   **Eric Christensen**
14.0.1   *eric@christensenplace.us*

Update for Fedora 14
Added text for InfraRecorder. (BZ 527854)

Revision   **Mon Apr 12 2010**   **Rüdiger Landmann**
13.1.0   *r.landmann@redhat.com*

Update for Fedora 13
Include instructions for Windows 7