2.2. MAKING INSTALLATION USB MEDIA

You can use a USB drive instead of a CD or DVD to create bootable media for installing Red Hat Enterprise Linux on AMD64 and Intel 64 systems and IBM Power Systems servers. The exact procedure varies depending on whether you want to perform it on a Linux or Windows system. You can create minimal boot media and full installation media using the same procedure; the only limitation is the capacity of the USB drive - it must have enough space to fit the entire image, which means roughly 350 MB for minimal boot media and 4.5 GB for full installation media.

2.2.1. Making Installation USB Media on Linux

The following procedure assumes you are using a Linux system and that you have downloaded an appropriate ISO image as described in Chapter 1, *Downloading Red Hat Enterprise Linux* (chap-download-red-hat-enterprise-linux.html) . On most Linux distributions, it will work without the need for installing any additional packages.

WARNING

This procedure is destructive. Any data on the USB flash drive will be destroyed with no warning. Make sure that you specify the correct drive, and make sure that this drive does not contain any data you want to preserve.

Many Linux distributions provide their own tools for creating live USB media: *liveusb-creator* on Fedora, *usb-creator* on Ubuntu, and others. Describing these tools is beyond the scope of this book; the following procedure will work on most Linux systems.

Procedure 2.1. Making USB Media on Linux

1. Connect a USB flash drive to the system and execute the **`dmesg`** command. A log detailing all recent events will be displayed. At the bottom of this log, you will see a set of messages caused by the USB flash drive you just connected. It will look like a set of lines similar to the following:

   ```
   [ 170.171135] sd 5:0:0:0: [sdb] Attached SCSI removable disk
   ```

   Note the name of the connected device - in the above example, it is **`sdb`** .

2. Log in as `root` :

   ```
   $ su -
   ```

   Provide your root password when prompted.

3. Make sure that the device is not mounted. First, use the **findmnt *device*** command and the device name you found in the earlier steps. For example, if the device name is **sdb**, use the following command:

```
# findmnt /dev/sdb
```

If the command displays no output, you can proceed with the next step. However, if the command does provide output, it means that the device was automatically mounted and you must unmount it before proceeding. A sample output will look similar to the following:

```
# findmnt /dev/sdb
TARGET   SOURCE   FSTYPE  OPTIONS
/mnt/iso /dev/sdb iso9660 ro,relatime
```

Note the **TARGET** column. Next, use the **umount *target*** command to unmount the device:

```
# umount /mnt/iso
```

4. Use the **dd** command to write the installation ISO image directly to the USB device:

```
# dd if=/path/to/image.iso of=/dev/device bs=blocksize
```

Replace */path/to/image.iso* with the full path to the ISO image file you downloaded, *device* with the device name as reported by the **dmesg** command earlier, and *blocksize* with a reasonable block size (for example, **512k**) to speed up the writing process. The `bs` parameter is optional, but it can speed up the process considerably.

> **IMPORTANT**
>
> Make sure to specify the output as the device name (for example, **/dev/sda**), not as a name of a *partition* on the device (for example, **/dev/sda1**).

For example, if the ISO image is located in **/home/testuser/Downloads/rhel-server-7.0x86_64-boot.iso** and the detected device name is **sdb**, the command will look like the following:

```
# dd if=/home/testuser/Downloads/rhel-server-7.0x86_64-boot.iso of=/dev/sdb bs=512k
```

5. Wait for **dd** to finish writing the image to the device. Note that no progress bar is displayed; the data transfer is finished when the `#` prompt appears again. After the prompt is displayed, log out from the `root` account and unplug the USB drive.

The USB drive is now ready to be used as a boot device. You can continue with Chapter 5, *Booting the Installation on AMD64 and Intel 64 Systems* (chap-booting-installer-x86.html) on AMD64 and Intel 64 systems or Chapter 10, *Booting the Installation on IBM Power Systems* (chap-booting-installer-ppc.html) on IBM Power Systems servers.

2.2.2. Making Installation USB Media on Windows

The procedure of creating bootable USB media on Windows depends on which tool you use. There are many different utilities which allow you to write an ISO image to a USB drive. Red Hat recommends using the **Fedora LiveUSB Creator**, available for download at https://fedorahosted.org/liveusb-creator/ (https://fedorahosted.org/liveusb-creator/).

IMPORTANT

Transferring the ISO image file to the USB drive using Windows Explorer or a similar file manager will not work - you will not be able to boot from the device.

Procedure 2.2. Making USB Media on Windows

1. Download and install **Fedora LiveUSB Creator**.
2. Download the Red Hat Enterprise Linux ISO image you want to use to create the media. (See Chapter 1, *Downloading Red Hat Enterprise Linux* (chap-download-red-hat-enterprise-linux.html) for instructions on obtaining ISO images.)
3. Plug in the USB drive you will be using to create bootable media.
4. Open **Fedora LiveUSB Creator**.
5. In the main window, click the **Browse** button and select the Red Hat Enterprise Linux ISO image you downloaded.
6. From the **Target Device** drop-down menu, select the drive you want to use. If the drive does not appear in the list, click the refresh button on the right side of the menu and try again.
7. Click **Create Live USB**. The boot media creation process will begin. Do not unplug the drive until the `Complete!` message appears in the message box at the bottom. The process usually takes up to 15 minutes, depending on the drive's write speed, version of the USB specification and the size of the ISO image you used.

Figure 2.1. Fedora LiveUSB Creator

8. When the creation process finishes and the `Complete!` message appears, unmount the USB drive using the **Safely remove hardware** icon in the system's notification area.

The USB drive is now ready to be used as a boot device. You can continue with Chapter 5, *Booting the Installation on AMD64 and Intel 64 Systems* (chap-booting-installer-x86.html) on AMD64 and Intel 64 systems or Chapter 10, *Booting the Installation on IBM Power Systems* (chap-booting-installer-ppc.html) on IBM Power Systems servers.