

Linux Crash Course – Part II

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Get Scientific Linux

You can download the Scientific Linux CDROMs from here:

<https://www.scientificlinux.org/download/>

<https://www.scientificlinux.org/documentation/faq/legal>

Why?

Red Hat Linux (practically *all* other Linux distributions) have trade mark restrictions which limit re-distribution. Scientific Linux explicitly grants you the right to re-distribute, which allows you to avoid the annoying re-branding exercise.

Configure a local software repository

Linux distributions come with an enormous amount of free software. The Scientific Linux distribution is contained on 8 CDROMs. Juggling disks to install software is a painful exercise and it is much easier to copy all the CDs to a hard disk on one machine in a laboratory and install all the other machines from there over the LAN.

The first step is to copy all the CDs to a central spot, such as `/home/sl54`:

```
# mkdir /home/sl54
```

Insert a CD and wait for it to auto mount.

```
# cp -af /mnt/sl54/* /home/sl54/.
```

```
# eject
```

Rinse and repeat for the rest of the CDs. All the CDs will be copied *'on top of each other'* in the directory `/home/sl54`.

Configure the Yellow Dog Updater (yum) configuration file `/etc/yum.repos.d/local.repo` to look like this:

```
[local]
name=local
baseurl=file:///home/sl54/
enabled=1
```

and remove or disable all the other `.repo` files in that directory!

Rebuild the repository meta data with the `createrepo` command:

```
# cd /home/sl54
# createrepo .
```

Now, you should be able to install software from this local hard disk repository using yum.

```
# yum install nano
```

and that should install the *nano* editor.

Create a new user account:

Click Menu, Administration, Users and Groups

Create a user called *sl54*, with password *supersecret* and home directory */home/sl54*

Network the software repository

The next step is to enable a server on this machine so that the repository can be accessed from other machines over a LAN. The simplest method is to install a NFS server, but you can also use a HTTP server. Using a FTP server doesn't work. The NFS daemon is installed by default, so all we need to do is create a special user account for installations and enable it, then export the repository.

Create a user account called *sl54*, with password *supersecret* and home directory */home/sl54*. By doing that, one can easily log in as user *sl54* and immediately get access to the repository directory.

Run the NFS wizard:

Click Menu, Administration Server Settings, NFS

Click Add

Directory: */home/sl54*

Hosts: *

User Access, Local User ID: 501, Local Group ID: 501

(assuming that the *sl54* user is 501)

now restart the NFS daemon:

```
# service nfs restart
```

and check for error messages.

Then open the firewall:

Click Start, Administration, Security Level and Firewall

supersecret

Tick NFS and click OK

Prepare a bootable USB memory stick

In the directory */home/sl54/images* is a file *diskboot.img*. Copy this file to a small USB memory stick (only 1GB needed). This stick can then be used to boot a new machine and install it over the network from the file server above.

Plug the stick in.

```
$ su -
```

```
supersecret
```

```
# dmesg
```

Note the memory stick device name, probably */dev/sdb*.

Verify by reading the stick and watching the light for activity:

```
# dd if=/dev/sdb of=/dev/null bs=1000 count=10
```

If the light flashes, then it is the correct device.

Copy the image to the stick:

```
# dd if=/dev/diskboot.img of=/dev/sdb  
# sync
```

You can now remove the device and go to the target machine.

Install a Machine over NFS

Run the BIOS configuration utility and configure the machine to boot off a removable USB device.

Insert the USB stick and reboot.

Type *[Enter]* at the boot prompt.

Select DHCP if your network connection supports it.

Select NFS as the installation medium.

Set the User name to *sl54*

Set the password to *supersecret*

Set the installation directory to */home/sl54*

and then it should proceed with the installation as normal.