Installing Linux-Athena – SIPB Installer

Redhat 6.2/Athena 8.4[1]

You may have used the Linux-Athena workstations deployed in many Athena clusters around campus. These workstations are installed by an installer distributed by Information Systems. Since it makes a lot of assumptions about the ethernet card and video hardware, it won't work on a workstation whose hardware configuration isn't exactly like that of the cluster machines.

The SIPB installer, documented here, is designed to install the same software as is deployed in the clusters, onto any hardware that RedHat Linux supports. It should produce a workstation capable of auto-updating, and which is fully supported by Information Systems.

This is a substantial change from previous versions of Linux-Athena. Loosely speaking, previous versions of Linux-Athena strived to produce a system resembling RedHat Linux, with Athena functionality added. By comparison, this version chooses the Athena way of doing things, when there is conflict between the Athena way and the RedHat way.

Before you begin the install, you should make sure that your system is prepared to run Linux and that you have all the information you will need to do the install:

1. We urge you to become familiar with how the end product of this install should behave, before you begin. Read the Private Workstation Owner's Guide at `http://web.mit.edu/olh/Private/Private.html`.
2. Install a supported Ethernet card. The list of cards which Information Systems recommends can be found at `http://web.mit.edu/is/desktop/pcether.html`. You can find a list of other cards that will work with Linux in `/mit/linux/docs/HOWTO/Hardware-HOWTO`.
3. Get a hostname and an IP address. Look at `http://rcc.mit.edu/` for more information, including forms which you can use to submit a request for your IP address.[2]
4. Partition your disk for Linux. Partitioning breaks you disk up into pieces, each of which has a specific use. We suggest two to four partitions:

   `/` The root partition, where most files will be places. It should 2 gigabytes or larger.

   swap The swap partition gives your machine additional memory space. Swap plus real memory should be at least 150Mb. Twice real memory is another rule of thumb.

   `/boot` The boot partition is where the most basic parts of the OS will be installed (the kernel). The kernel much be in the first 8Gb of your disk. If your root partition goes outside the first 8Gb of your disk, you should use a 20Mb boot partition, placed within the first 8Gb, to make sure the kernel is in the right place.

   `/usr/vice/cache` This is the AFS cache. If possible it should be on a seperate 100Mb partition, to make sure that there is always space available to it.

   Partitioning will generally require you to repartition your drive in order to have free space. You can do this at install time, if you don't mind losing whatever else is on your drive. If you'd like to keep an existing install, you might want to try using FIPS, which can be found at `http://www.igd.fhg.de/~aschaefe/fips/`, to shrink your partition. Do be sure, however to make a backup of whatever you want to keep, before changing partition sizes or installing linux.
5. Find out the following information about your computer (You can find this information by physically looking in your machine or by looking at your DOS/Windows configuration):
   - Type and configuration of your ethernet card.
   - Type and configuration of SCSI card (if you have one).
   - Type of video card (including the chipset), amount of video memory, and monitor information (including available resolutions and horizontal and vertical sync range). It may help to have your monitor and video card manuals on hand.
   - Type of mouse and how it is connected to your computer.

After reading through the documentation, you are ready to begin installing Linux on your system. Don't worry, it is a lot easier than it seems. We recommend the following basic outline:

[1] If a machine is left up overnight, with no one logged in, it should automatically update itself to Redhat 7.1/Athena 9.0. If you want your machine to take this update immediately. you can run "`/etc/athena/update_ws 9.0`".

[2] MIT Departments (and only departments) can call x3-1104. Students on Resnet should use the web page.

1. Create your boot disk. From any Athena workstation, make a boot floppy by running

   ```
   add linux
   linux-install-floppy
   ```

2. Boot your machine with the boot disk you have prepared. If it boots successfully, you will be presented with the RedHat Install screen.

   When prompted, select "NFS install", and provide the install program with the information you looked up prior to beginning the install.

   You'll need to provide your IP address, but installer should make a reasonable guess at the correct netmask and network addresses. For most people on MITnet, the following table should help you cross check these:

Parameter	Form	Example	Yours
IP Address	18.b.c.d	18.20.0.153	18.____.____.____
Netmask	255.255.0.0	255.255.0.0	255.255.0.0
Network	18.b.0.0	18.20.0.0	18.____.0.0
Broadcast	18.b.255.255	18.20.255.255	18.____.255.255
Gateway	18.b.0.1	18.20.0.1	18.____.0.1

   These are site specific configurations that should also be provided by the installer:

   - Nameserver: `18.70.0.160`
   - NFS Server: `sipb-nfs.mit.edu`
   - Path to RedHat directory: `/u3/is-linux/redhat-6.2`

3. You've now reached the point at which the installer will spend some time downloading the heavily customized second stage installer (up until now, you've been exclusively using stock RedHat).

   If it can figure out enough about your video hardware, it should start the X based installer. If not, it'll fall back to the text mode one (if it doesn't do this correctly for you, you can force the installer to run in text mode, by starting over, and typing `text` at the very first prompt that you are given, when the system boots).

4. One of the questions you'll be asked about is if you want to register your workstation with Information Systems. To learn more about this option, take a look at `http://web.mit.edu/acs/min-std-athena.html`.

   If you choose to let the installer register you, it'll simply send mail similar to the mail that the web form would send, so if you prefer to use the web form, feel free. If you've already registered from the hostname that you're using, you don't need to register it a second time. Running `hesinfo` *hostname* `cluster` will check for hesiod information associated with your hostname. If you've already registered, it'll say something like

   ```
   syscontrol control/control-8.4 8.4
   sysprefix /afs/athena.mit.edu/system/rhlinux
   syscontrol control/control-8.3 8.3
   syscontrol control/control-9.0 9.0
   ```

   (this takes a few hours to update, so don't expect to see it right away).

   Even if you would prefer that your workstation not take updates automatically, we still recommend that you register, since it'll make taking updates manually a lot easier. You can easily disable auto-update later,[3] but the install process assumes that the workstation will take its first update automatically.

5. Using the default configuration, the install process takes about an hour on MITnet. (It will take longer from off-campus ILGs and houses with a cable-modem connection to the Internet.)

6. After rebooting you should have a system equivalent to a public Athena workstation. Much of the maintenance of this system will be Athena-specific, rather than Linux-specific, so even if you've maintained a Linux workstation before, we encourage you to look at the Private Workstation Owner's Guide at `http://web.mit.edu/olh/Private/Private.html`.

If you have any questions about the install process, or running Linux-Athena, you can stop by the SIPB office (W20-557, x3-7788), or send e-mail to `linux-help@mit.edu`. Bugs in Linux-Athena should be reported using `sendbug`, while bugs about the install process can be reported to `linux-dev@mit.edu`.

You should subscribe to the Linux-Athena announcements mailing list, `linux-announce`, if you are not already subscribed, To do so, type:

```
blanche linux-announce -a $USER
```

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[3]Edit `/etc/athena/rc.conf`