Computer Services Guides

Dial-In Information Red Hat Linux 6

Red Hat Linux Set-up

General Red Hat Linux 6 Setup

Note that the initial configuration must be performed while logged in as root, due to the privileges required. You also must have installed the proper dialup networking packages from Red Hat (such as the "ppp" package--normally these are installed during the initial installation if you selected for dialup networking to be installed). These instructions primarily cover setup via the GNOME desktop environment.

Configuring your serial port and modem:

Before you can use PPP, you must first setup your serial port and modem for Linux usage.

DOS/Windows often refer to serial ports as "COM ports", and number these sequentially starting at 1. For example: COM1, COM2, COM3, etc. Each "COM port" has an associated port address and IRQ number which define it. Traditionally, COM1's port address is 3F8 (hex), and its IRQ is 4. COM2 is 2F8/3, COM3 is 3E8/4, and COM4 is 2E8/3. However, this is not always the case. Linux begins its numbering of serial ports starting at 0, and calls them ttyS0, ttyS1, ttyS2, ttyS3, and so on. ttyS0 will normally correspond to DOS/Windows' COM1.

If you have an external modem, you probably won't have too much trouble unless you have set non-standard port or IRQ values on your COM ports in your BIOS's setup.

If you have an internal modem, there are several possibilities. You may have an internal modem with jumpers that allow you to configure the parameters on it (COM port, or possibly the specific port address/IRQ). If that's the case, you should be aware of what it is set to. If you have an internal modem that is "Plug and Play", then normally the operating system is responsible for assigning a port address/IRQ (and hence a COM port) to the modem, and Linux does not normally do this. If your BIOS setup has an option in it reading something along the lines of "Running Plug and Play OS?", then set it to "No", and your serial ports may be detected when you next boot Linux. If not, you may need to use Linux's isapnptools package to configure the card for Linux usage (see the modem how-to mentioned below, and/or the documentation for isapnptools which is likely in the /usr/doc/isapnptools-1.18/ directory on your system). If you have a "WinModem" or a PCI card modem, it's likely that your modem may not work with Linux at all.

You can use the command-line command "dmesg|grep tty" after bootup to see which serial ports have been detected on your machine, and which port address/IRQ pairs they correspond to. Normally the "ttyS" numbered 0 would correspond to DOS/Windows COM1, the one numbered 1 would correspond to COM2, and so on.

To set up your modem, you need to create a symbolic link from your modem's device file to a file named "/dev/modem". You can either do this with a command or the GNOME Control Panel. For example, if your modem is on ttyS0, use this command:

```
ln -s /dev/ttyS0 /dev/modem
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Or, go to the GNOME start menu, to the System menu, then to "Control Panel". Select the Modem Configuration icon in the Control Panel, and select your COM port. It will create the /dev/modem link.

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If you are unable to get your modem working with Red Hat, you may want to consult the Linux modem how-to.

PPP setup:

To set up PPP, you can use the LinuxConf utility. To run this in GNOME, go to the GNOME start menu, then to the "System" menu, then pick LinuxConf.

First, configure the name servers in LinuxConf. Go to the item Config->Networking->Client Tasks->Name server specification (DNS). In the "default domain" field, enter "shsu.edu". In the "nameserver 1" field, enter "158.135.1.20". In the "nameserver 2 (opt)" field, enter "192.92.115.8". Click "Accept". This will write a file /etc/resolv.conf which contains the information on your nameservers.

Next, go to the item Config->Networking->Client Tasks->Routing and gateways->PPP/SLIP/PLIP. Select "Add" to add a new PPP interface. Select "PPP" for the type of interface, enter the phone number (ie: 438-8112, or 1956) in the appropriate field, leave the modem port set at /dev/modem, and select the "Use PAP authentication" option. Click the "Customize" button to set other options. You will probably want to enable the "Allow any user (de)activate the interface)" option (so you can connect and disconnect while not logged in as root later), and you may wish to modify the modem initialization string under the "Communication" tab if necessary ("ATZ" is fine for most modems, but may not be appropriate for yours--consult your modem manual).

Next, click "Accept" to save your config, and "Quit" to leave the PPP configuration. Click "Act/Changes" and then "Activate the changes", then "Quit" again to exit LinuxConf.

This basic PPP setup should work fine for connecting to SHSU. If you have problems or need more detail on PPP configuration, however, you might wish to consult the Linux PPP how-to.

Connecting:

To start your connection, you can use LinuxConf, or UserNet.

To connect via LinuxConf you must be logged in as root. Start up LinuxConf (its location is given above). Go to the PPP/SLIP/PLIP section as mentioned above, click on the interface name (such as "ppp0"), then use the "Connect"/"Disconnect" buttons to connect or disconnect your PPP connection.

To connect via UserNet (Red Hat's recommended method), you do not need to be logged in as root (assuming you enabled the "Allow any user (de)activate the interface" option on your ppp interface). Either run "usernet" from a command-line, or go to the GNOME start menu and select "Run program" then enter "usernet". The UserNet program presents you with a list of network interfaces on your machine, and you can single-click on an interface to toggle its state between up and down (an interface with red color is down, an interface with green color is up, an interface with yellow color is in the process of connecting).

If problems occur while establishing the PPP connection, they will appear in your kernel log. You can view recent kernel log entries with the "dmesg" command from the command-line. You can also look at the system log, /var/log/messages (although this must be done as root)--you might want to "tail /var/log/messages" to see the last page of it.